

# Sneak Preview

A BRIDGE CITY FOUNDER'S CIRCLE PUBLICATION

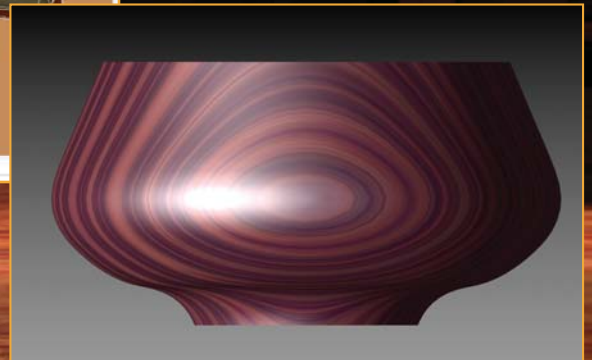
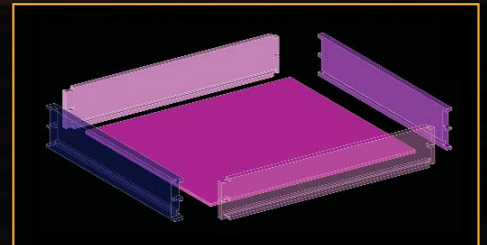
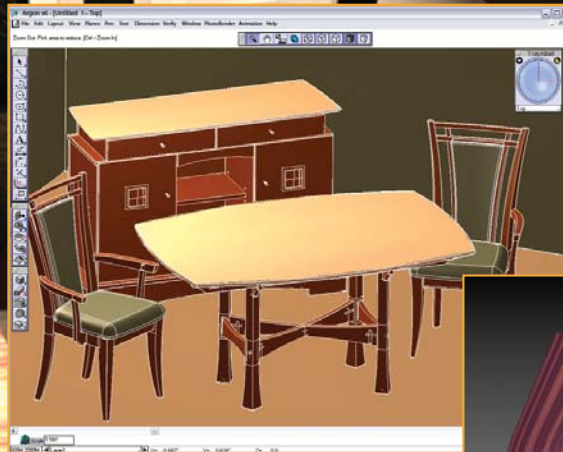


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# 68

OFFER GOOD THROUGH  
JUNE 4, 2004

## Are You Ready For Solid Modeling?



All Of The Images You See On This Cover Are  
Solid Models Made With Argon.

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## Dear Founder's Circle Member:

**H**ave you ever entered your shop and determined what you were going to make—as you made it?

Meaningful projects should never be designed or engineered on the spot as they take shape, without regard to form. For some bizarre, strange reason, many woodworkers find delight in participating in one of the most labor intensive activities known to man, completely oblivious to what the rest of us must look at when they're done. *Aren't you glad airplanes are not made this way?*

What ever happened to the thought that objects should be worthy of the space they occupy? When invested labor and material costs become such a burden that terminally ugly projects cannot be abandoned, well *this is not good*. Woodworkers who are infatuated with wood grain and obsessed with power tool processes become paralyzed as designers because the visual function of their work is an afterthought to the materials and the *building* techniques. For example, just because your table saw cuts a square edge *doesn't mean you should leave it that way*.

Production processes are important, so are tools with cords. *But they are only the means to an end*. When you are

done with a project, the most important thing left behind is the "what." Ultimately, nothing else matters.

*Visually challenged* work shamelessly attacks our senses because the "solution" is primitive—a mere afterthought. *Primitive solutions transpire when the idea and the entity occur simultaneously*. The secret to good work—refined work—is the ability and discipline of the maker to be in a position to *reject* ideas.

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Good work results from a distillation process where bad ideas boil away leaving forms with a chance of survival in our visual world. Good work is

a discipline process that needs to be practiced by anybody who makes things. The time has arrived whereby this message—the message of good work—can and should, be so tightly parallel parked between those ringing ears, it cannot move or leave!

*So what has changed?* A growing number of today's woodworkers now believe the most important woodworking tool is the—*personal computer*. Please take a few minutes and follow along as we introduce you to an incredibly powerful new concept—**solid modeling**.

## A Brief History Of CAD Software

**T**he evolution of CAD (*computer aided design or drafting*) began with 2D wireframe geometry. Similar to drawing on paper, 2D wireframe consists of straight or curved lines made in a two dimensional grid (*x and y*). CAD software speeds the process of drawing because it is precise and fast. The real advantage to using 2D wireframe is making changes and modifications—rarely is there a need to erase or "start over" as all legacy work can be kept for future reference.

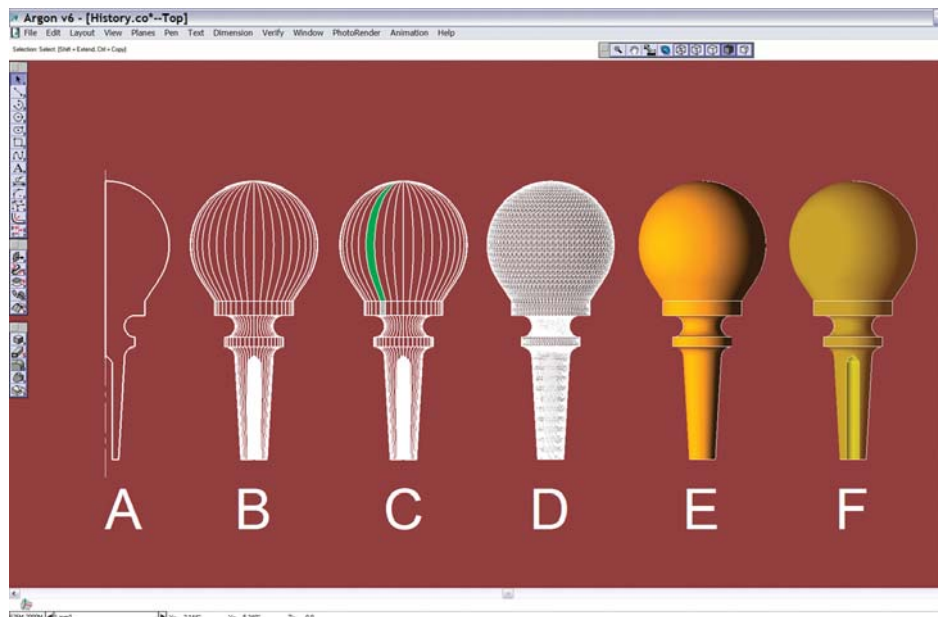
2D wireframe evolved into 3D wireframe geometry and wire meshes. With the additional dimension of "z" (*depth*), a new method was born for designers to conceptualize on the computer. Soon it became possible for 3D wireframe files to be converted into programs for computer aided machining (*CAM*). The ability for ideas to proceed directly from the computer

to production machines quickly became embraced across all manufacturing disciplines.

Today, solid modeling has become the de-facto method for computer aided design and manufacturing. **Solid modeling (as a process) is uncannily similar to working with wood: you shape, bend, cut, stretch, shrink, drill and otherwise manipulate "virtual wood" on the screen with tools similar in function to the tools in your shop.** It is no irony that solid modeling feels psychologically identical to working in your shop! It is an absolute blast to create perfect work this way, and if you don't like it, **CHANGE IT!** The ability to *quickly reject* and *reaffirm* ideas is the reason why all serious woodworkers should employ solid modeling in their shop. Furthermore, if you are in a woodworking business you cannot afford to be without this phenomenal tool. Solid modeling is arguably the most important and valuable application you can use in a woodshop.



Until recently, solid modeling was exclusively the advantage of corporations that could justify the \$25,000 to \$100,000+ cost of software and hardware. This is no longer true! Today, computers are a commodity (you likely already have one) and professional solid modeling software is now equivalent in price to an inexpensive imported power tool purchase. It is difficult to conceive of another tool that gives you the opportunity to do your very best work this fast. Solid modeling will make your shop time more efficient and your work more accurate—an immeasurably powerful combination that may be difficult to immediately comprehend. Something this fun and beneficial comes along so very rarely!



All of the images in the illustration above were created from the 2D wireframe marked "A." "B" is a 3D wireframe. "C" has a section of the 3D wireframe skinned. "D" is a 3D mesh. "E" and "F" are both solid models with transparency turned on for "F." Turning "A" into "F" in Argon involves a single mouse click!

Over the next few pages we will share with you the power of 3D solid modeling and entice you to change your woodworking life forever. The examples to follow are illustrated in a tutorial fashion with actual "screen shots" for you to sense how easy it is to generate ideas using *Argon*. We believe *Argon* is the most affordable and easy-to-use professional solid modeler available today. None of these examples are difficult or time consuming, all are fun, and the narrative creates a nice overview of this amazing program. Where possible, most of the *Argon* tool icons used for the examples are illustrated to familiarize you with the intuitive nature of solid modeling. Standard Windows short-cut keys were used but not discussed. The discussion to follow is not intended to be a step-by-step demonstration of how to replicate the examples.

For video demonstrations of how we created the projects in this offer, please visit our website at <http://www.BridgeCityTools.com>. Click on the tab labeled: SOLID MODELING.



Now, sit back and learn what you can do in the comfort of your home....

## The Drafting Assistant

In the examples that follow, you will find numerous references to the *Drafting Assistant*. The *Drafting Assistant* is a unique feature of all Ashlar® software that makes the experience of CAD incredibly pleasurable. Difficult to illustrate in print, simply imagine an interactive drafting genius lurking inside your monitor anticipating

your every move. Do you want to find the exact center of a line? The *Drafting Assistant* instantly knows where this is. Do you want to draw a circle tangent to two lines? No problem for the *Drafting Assistant*. The *Drafting Assistant* is amazingly powerful and is the singular reason why *Argon* works the way you think.

## Here's How I Saved Hundreds Of Dollars With One Basic Line!

**S**olid modeling is a combination of 2D and 3D modeling techniques. This first example uses 2D modeling techniques to create a jig saw puzzle with a "surprise."



**STEP 1:** Using the *Rectangle* tool, draw a rectangle and while it is highlighted, enter 7 in the *Width* box and 7 in the *Height* box. Now you have a perfect 7" square.

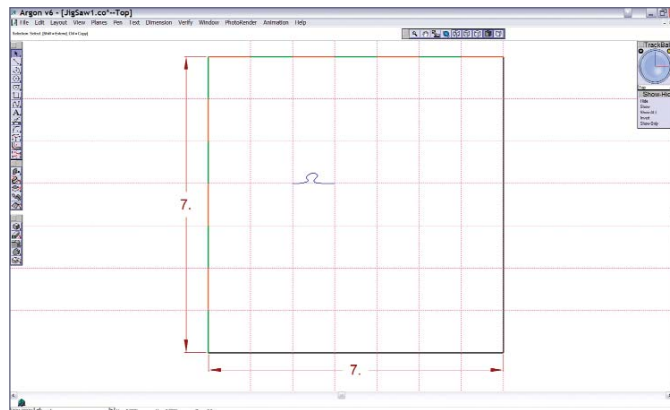


**STEP 2:** The *Divide Curve* tool "breaks" a line or curve into a specified number of pieces *without calculations*. Divide one horizontal and one vertical line into 7 pieces each. In the illustration below, each segment of the "broken line" is a different color for clarity.

**STEP 3:** By holding down the *Ctrl* and *Shift* keys, you can "stroke" your mouse either vertically or horizontally to create construction lines. The *Drafting Assistant* instantly recognizes line endpoints, so creating perfectly aligned construction lines takes seconds. Nice!



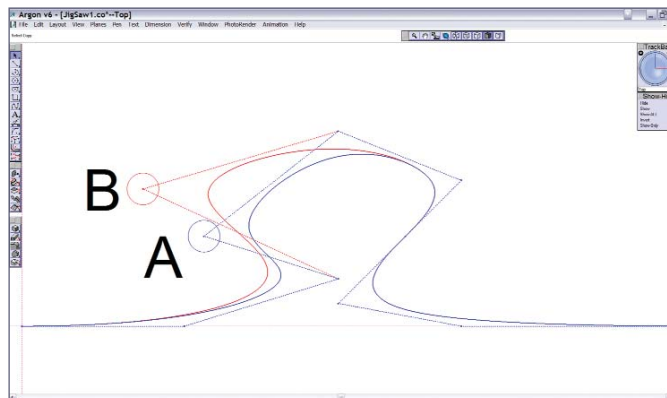
**STEP 4:** Zoom in and use the *Vector Spline* tool to make a spline curve similar as shown along one leg on the grid. **This is the only profile you need to make the entire puzzle!** All of the remaining splines are cloned from this initial effort. Move the spline control points anyway you see fit to create an "interlocking" puzzle path you can follow on your scroll saw.



FOLLOW STEPS 1 THROUGH 4 AND YOUR SCREEN WILL LOOK LIKE THIS. THE "BROKEN" LINES ARE USED AS GUIDES TO CREATE THE CONSTRUCTION LINE GRID. FOR A USER WITH BASIC CAD KNOWLEDGE, ELAPSED TIME TO REACH THIS POINT IS LESS THAN TWO MINUTES!



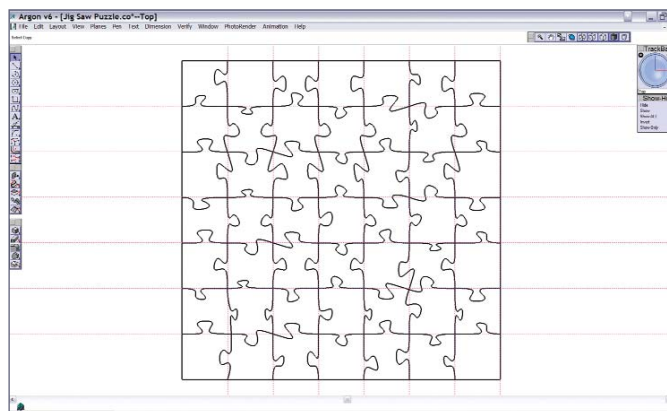
**STEP 5:** Using the *Mirror* tool, you can clone the initial spline to all legs of the grid to create the puzzle. Additionally, the *Rotate* tool will allow you to flip the spline. The *Drafting Assistant* makes the alignment to the grid foolproof.



THE EXCUSE "I CAN'T DRAW" DOES NOT FLY WITH ARGON. CHANGING THE GRACEFUL CURVE OF THE BLUE SPLINE TO THAT OF THE RED SPLINE INVOLVED SELECTING POINT "A" (CIRCLED FOR CLARITY) AND MOVING IT TO "B". THE ABILITY TO MAKE GRACEFUL CURVES IS PARTICULARLY IMPORTANT TO WOODWORKERS. EACH CURVE IN THIS PUZZLE IS A CLONE OF THE FIRST, AND EACH CLONE UNIQUELY "TWEAKED" (AS SHOWN) TO BECOME DIFFERENT FROM THE OTHERS. IT'S FAST, EASY AND FUN.

**STEP 6:** Make tiny changes to each spline so the puzzle pieces are uniquely different. **Total elapsed time for these 6 steps: 15 minutes.**

**STEP 7:** Print the puzzle on a piece of paper, affix to your puzzle material and cut the 49 pieces. It is so easy!



HERE IS THE FINISHED PUZZLE MADE WITH 83 CLONES OF A SINGLE SPLINE CURVE. THE SECRET TO CAD IS TO DRAW AS LITTLE AS POSSIBLE. DRAW ONCE AND MAKE A COPY—DRAGGING YOUR COPIES TO THE GRID IS LITERALLY A SNAP WITH THE DRAFTING ASSISTANT. COPY, PASTE, ROTATE, MIRROR AND "TWEAK" WERE THE TECHNIQUES USED TO MAKE THIS PUZZLE IN ABOUT 15 MINUTES TIME! PRINT, AFFIX TO YOUR STOCK AND START CUTTING AWAY!


### So, how did I save hundreds of dollars from basically one bent line?


I have two kids in college who are always calling me for MORE money. I made this puzzle using the steps above and informed them that "finance" calls would be considered after they completed my little 49 piece puzzle. I have not had a money request in months. My son would rather get a job than do this puzzle. I don't think my kids like jigsaw puzzles—made from clear Plexiglas®.


# Argon Is A Powerful Tool For Exploring Shapes!

Here we will explore 3D solid modeling capabilities to create an aesthetically pleasing bowl that will be turned on a lathe. This same process is used for exploring any shape variations—the idea is to be able to reject the bad ideas and find your best effort! This is so fast and fun that your work can't help but become visually stronger.

We will now explore designing a walnut bowl blank 8" in diameter and 4" tall. The following solid models will be "turned" from the respective 2D curves shown. Each of the bowl profiles takes a minute or two to conceive. **Here's how easy this is:**

 **STEP 1:** Draw a 4" by 4" square (*which represents half the bowl blank*) using the *Rectangle* tool.

 **STEP 2:** Create a profile in this square using the *Spline Curve* tool. Use the *Offset* tool to create an offset profile representing the bowl wall thickness. Connect the ends to close the profile.

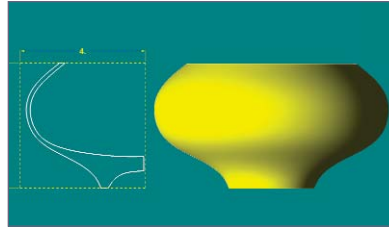
 **STEP 3:** Using the *Lathe Profile* tool, highlight the profile and click on the centerline. Viola! Your first solid model bowl....

**STEP 4:** Print the final bowl profile on a sheet of paper, affix to suitable material and saw the profile template—now lathe work will be as true as the profile made in *Argon*!

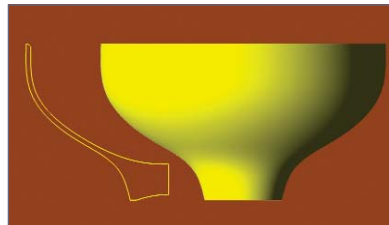
HINT: SOLID MODELING IS ALWAYS DONE "FULL SIZE." YOU DO NOT SCALE YOUR WORK ON THE COMPUTER; THEREFORE YOU DO NOT MAKE SCALING ERRORS. THIS IS A TREMENDOUS ADVANTAGE FOR WOODWORKERS. REGARDLESS OF WHAT YOU CREATE, BIG OR SMALL, YOU CAN PRINT OR TILE PRINT YOUR PROFILES FULL SIZE TO BE USED AS WOOD PATTERN OR CUTTING GUIDES. NOT ONLY IS THIS FAST AND ACCURATE, BUT YOU CAN REPEAT THE JOB AT A LATER DATE BY PRINTING ANOTHER TEMPLATE, OR TWEAK IT TO MAKE IT BETTER! THE ONLY TIME YOU "SCALE" YOUR WORK IS TO FIT A LARGE DRAWING ON A SMALLER PIECE OF PAPER, AND ARGON DOES THIS FOR YOU FAST, EASY AND ERROR FREE.

**STEP 5:** Select "Walnut" from the *Materials Library* (*Argon* has many wood choices) and *Render* the final design. This may sound weird, but talk to anybody who uses a solid modeler and they will tell you the same thing—you will feel great about this beautiful bowl and proud of how it turned out—AND IT HASN'T BEEN MADE YET! **This is the euphoria effect of solid modeling—the ability to conceive, tweak and build PERFECT WORK before you step foot in your shop!**

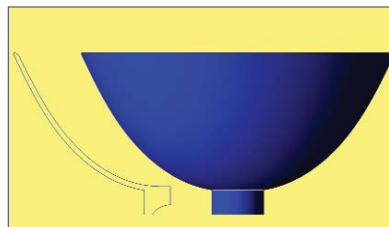
THE BOWL IDEAS TO THE RIGHT TOOK APPROXIMATELY 20 MINUTES TO CREATE. THE COLORS IN THE SCREEN SHOTS HAVE BEEN CHANGED TO REFLECT THE DIFFERENT LOOKS YOU CAN ACHIEVE IN ARGON. MOST IMPORTANT, THERE ARE NOW IDEAS TO REJECT! TYPICALLY, YOU WOULD HAVE 10-20 DIFFERENT IDEAS BEFORE SETTLING ON A FINAL DESIGN. OFTEN YOU WILL END UP WITH THREE OR FOUR REALLY GREAT IDEAS FOR FUTURE PROJECTS—ANOTHER BENEFIT OF TAKING THE TIME TO FIND OUT WHAT SURPRISES RESIDE IN YOUR HEAD!



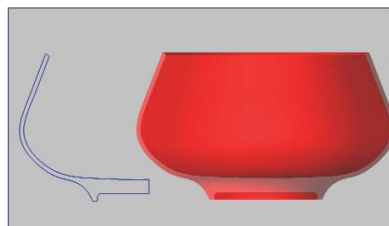
WITH AN 8"(D) X 4"(H) BOWL BLANK, THE 2D PROFILES ARE DRAWN WITHIN A 4" SQUARE. WHEN ALL THE LINES ARE CONNECTED, ARGON'S LATHE TOOL ROTATES THE PROFILE AROUND THE AXIS TO COMPLETE THE SOLID. TURNERS IN PARTICULAR CAN BENEFIT BY DOING HUNDREDS OF PROFILES BEFORE THEY MAKE A SINGLE CUT ON THE LATHE!



ARGON, A PROFESSIONAL 3D SOLID MODELER, GIVES YOU ULTIMATE FLEXIBILITY WHEN WORKING WITH LAYERS, COLORS AND FONTS. SOLID MODELING GIVES WOODWORKERS AND OTHER CRAFTSPEOPLE THE CONFIDENCE THEIR FORMS WILL STAND THE TEST OF TIME.



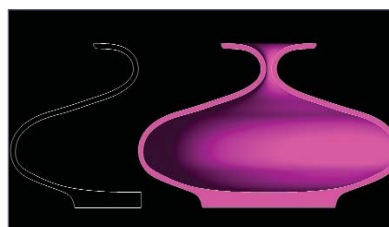
THIS PROFILE WILL MAKE A BEAUTIFUL BOWL, BUT IS NOT PRACTICAL AT 8" IN DIAMETER. THIS IDEA WILL BE SAVED FOR FUTURE REFERENCE AND REVISION OR PERHAPS A SMALLER BOWL BLANK. YOU WILL BE AMAZED HOW MANY FUTURE PROJECTS SPIN OFF FROM EACH OF THESE SESSIONS!



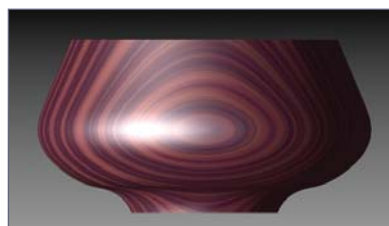
SOMETIMES IT IS DESIRABLE TO "SEE THROUGH" A PROJECT. HERE, TRANSPARENCY IS TURNED ON AND THE BOWL CROSS SECTION IS VISIBLE WITHOUT MAKING ANOTHER DRAWING. SOLID MODEL TRANSPARENCY IS A POWERFUL FEATURE FOR CHECKING INTERFERENCE IN ASSEMBLIES LIKE FURNITURE.



THIS IS NOT A PARTICULARLY STRONG IDEA AND ONE YOU DON'T WANT TO "DISCOVER" ON THE LATHE; WHAT A WASTE OF TIME AND WOOD. HOWEVER, IT MIGHT BE A TAKE-OFF POINT FOR A LAMP SHADE... OR? SAVE THE FORM IN YOUR "IDEAS" FOLDER BUT DON'T MAKE THIS BOWL!



THIS PROFILE HAS BEEN SPLIT AND ILLUSTRATES THE VESSEL IS GOING TO BE ONE CHALLENGING PROJECT TO TURN—THERE IS NOT MUCH ROOM DOWN THE NECK. THE BEAUTY OF SOLID MODELING IS DISCOVERING THESE ISSUES BEFORE YOU ENTER THE SHOP! YOU WILL NOT BELIEVE HOW MUCH TIME THIS WILL SAVE YOU. SOLID MODELING MAKES IT POSSIBLE FOR YOU TO ACCOMPLISH MORE EACH YEAR—WITH YOUR SOLID MODELING TIME FACTORED IN!



HERE'S THE FINAL BOWL DESIGN IN WALNUT. ARGON ALLOWS YOU TO CHOOSE FROM A MYRIAD OF MATERIALS AND WILL MAKE PHOTOREALISTIC RENDERINGS. THIS RENDERING TOOK ABOUT ONE MINUTE TO MAKE. AT THIS POINT, YOU WILL ACTUALLY FEEL LIKE YOU MADE THIS BOWL!



## Argon Is The Solid Modeler For Woodworkers!

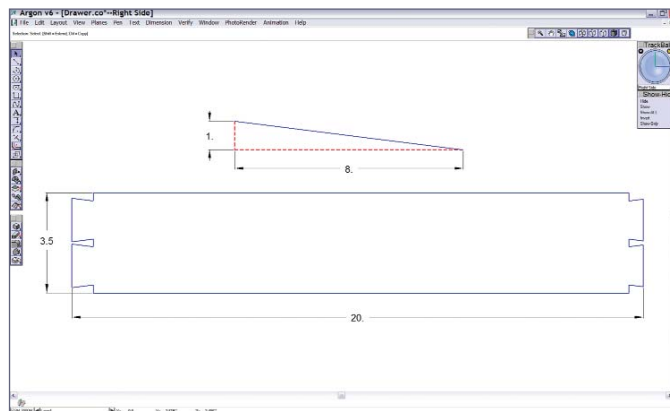
**S**olid modeling and woodworking are kindred spirits. The steps needed to create a solid model mirror the process in your shop with wood. Here are the basic steps to make a solid model of a dovetailed drawer. ***This drawer and all future dovetailed drawers are completed primarily from a single 2D profile!*** Once you have one drawer, creating a new size is nothing more than stretching, pulling, or shrinking to a new size. This is the power of solid modeling—every model you make is a foundation for a future model and the longer you solid model, the faster and more efficient you become!



**STEP 1:** Draw a horizontal line 8" in length using the *Line* tool. Next, draw a vertical line off the end and enter 1 in the *Length* box to make it exactly 1" in length. Connect the ends of these two lines to create a triangle. The hypotenuse of this triangle is the exact angle for an 8:1 dovetail profile.



**STEP 2:** The drawer side dimensions are 3.5" x 20" and the *Rectangle* tool does this in a heartbeat. Using a combination of *copy*, *mirror*, and the *Drafting Assistant*, position the dovetail angle lines in place, and use the *Corner Trim* tool to make clean corners for all intersecting lines. This single drawer side wireframe will be used to make all four sides of our drawer!



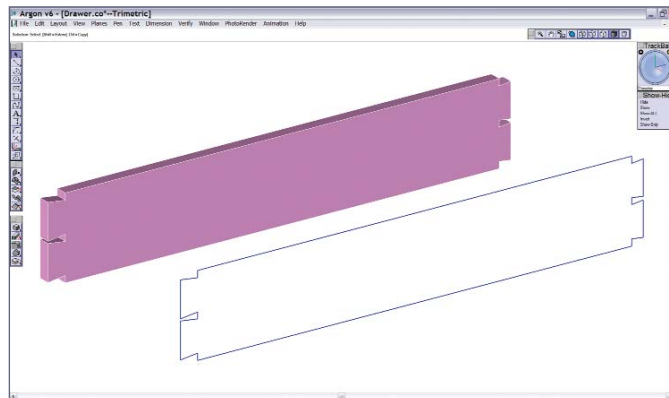
THE TOP 2D WIREFRAME WAS CREATED TO FIND THE ANGLED LINE FOR AN 8:1 DOVETAIL PROFILE. NEXT, A BASIC RECTANGLE WAS CREATED. FINALLY, THE ANGLED LINE WAS CLONED, MIRRORRED AND POSITIONED TO CREATE ALL OF THE DOVETAIL PROFILES. THE NUMEROUS "LOOSE ENDS" WERE ALL CONNECTED WITH THE NIFTY CORNER TRIM TOOL. THIS DRAWING TOOK APPROXIMATELY 2 MINUTES.



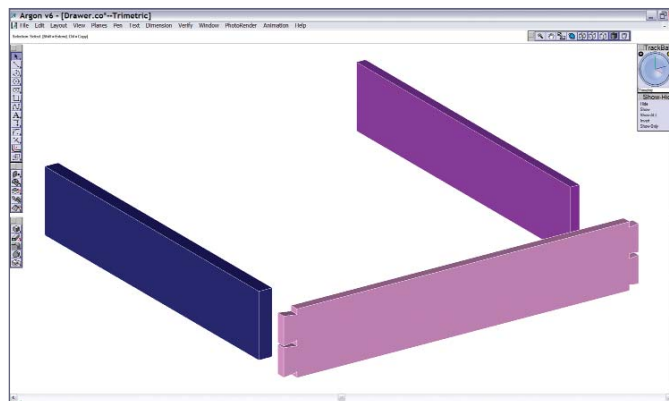
**STEP 3:** Using this 2D profile, a solid drawer side is created by extruding the profile  $\frac{1}{2}$ " using the *Extrude Solid* tool. Of course, you can make it any thickness you like and change it later if need arises.



**STEP 4:** Use the *Solid Block Primitive* tool to make the front and back pieces of the drawer. This is absurdly fast. When a "primitive" is on the screen, entering the L, W and T defines the final shape. *Argon* has many "primitives" to choose from which is much faster than creating solids from scratch.

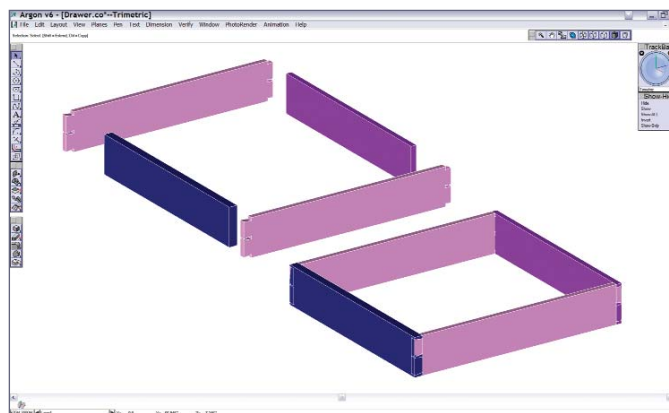


TYPICALLY, 2D WIREFRAME DRAWINGS BECOME SOLIDS WITH EXTRUDE OR REVOLVE TOOLS. ONCE ANY SOLID IS CREATED, IT CAN BE COPIED OR CLONED TO CREATE THE MATING SIDES.



A SOLID BLOCK PRIMITIVE IS JUST LIKE GOING TO YOUR LUMBER RACK AND GRABBING A BOARD. CUTTING "TO SIZE" IS AS SIMPLE AS TYPING IN THE THREE DIMENSIONS. HERE THE DRAWER FRONT IS  $\frac{3}{4}$ " THICK AND THE BACK IS  $\frac{1}{2}$ " THICK. THEY BOTH SHARE A COMMON LENGTH AND HEIGHT.

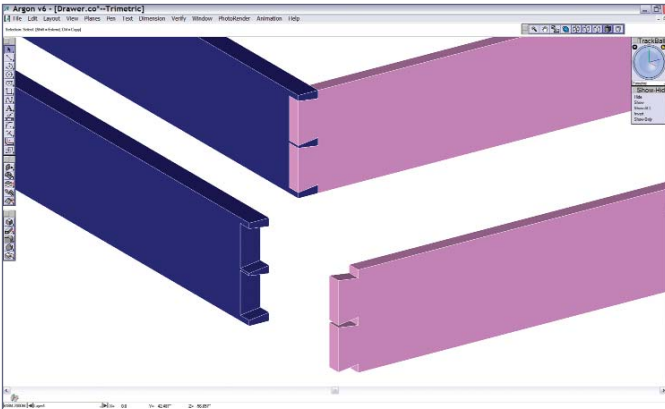
**STEP 5:** Highlight the drawer side, hold down the *Ctrl* key and drag a copy of the drawer side to the other half of the drawer. Next, drag the front, side and rear pieces to their finished position. The *Drafting Assistant* makes this dead on and super fast. There are other ways to do this, but this is the fastest way.



A COPY OF THE ORIGINAL SIDE WAS MADE (TOP) AND WERE POSITIONED "CORNER TO CORNER" (BOTTOM) IN ALL FOUR PIECES USING THE DRAFTING ASSISTANT.



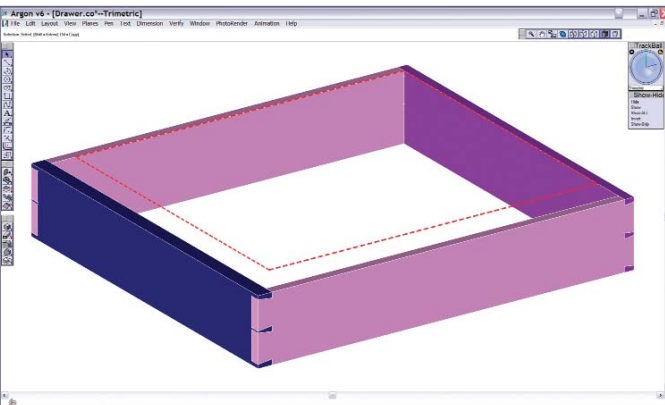
**STEP 6:** The drawer sides will be used to "cut" the dovetails in the front and back pieces. This process is a "Boolean" subtraction operation. Boolean operations create new model geometry by adding or subtracting models, to or from, each other. Using the *Boolean Subtract* tool, highlight the drawer front and while holding down the *Ctrl* key, click on one drawer side. This operation just created perfect dovetails in the drawer front. Repeat for the other three corners and you are done—perfect dovetail joints in about 15 seconds!



THE DRAWER SIDE IS USED TO CREATE THE DOVETAIL PINS IN THE FRONT AND BACK PIECES. BOOLEAN SUBTRACTION TAKES ONE MOUSE CLICK AND THE RESULTING JOINTS ARE GAP FREE! IT JUST DOESN'T GET ANY EASIER THAN THIS. DON'T YOU WISH IT WERE THIS EASY IN THE SHOP?



**STEP 7:** Using the interior of the drawer as a guide (*the Drafting Assistant makes this a snap*), use the *Rectangle* tool to trace the inside dimensions of the drawer. While this rectangle is still selected, enter  $+.5$  in the width and length box which adds  $\frac{1}{2}$ " to each dimension of the rectangle. In *Argon*, most math calculations are performed in the status window! For example, if you need a line length that is the square root of 89.5 inches plus 55 millimeters, enter " $\text{sqrt}(89.5)+55\text{mm}$ " in the status box of the line. You will likely never need a calculator to make a solid model with *Argon*.

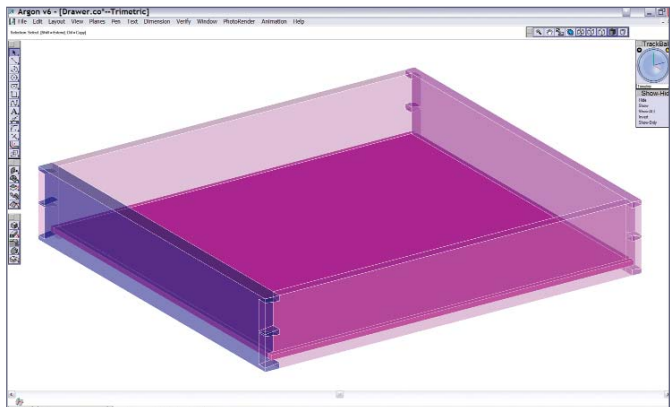


TO MAKE A DRAWER BOTTOM, USE THE INTERIOR DRAWER DIMENSIONS AS A GUIDE AND THE *Rectangle* tool will do the rest. WHILE THE RECTANGLE IS SELECTED, ENTER  $+.5$  IN THE WIDTH AND THE LENGTH STATUS BOXES AND THE RECTANGLE INCREASES ACCORDINGLY, REFLECTING THE PROFILE FOR THE BOTTOM. RARELY DO YOU MEASURE MAKING SOLID MODELS BECAUSE MOST OF YOUR GEOMETRY IS DERIVED EMPIRICALLY FROM OTHER MODEL COMPONENTS!

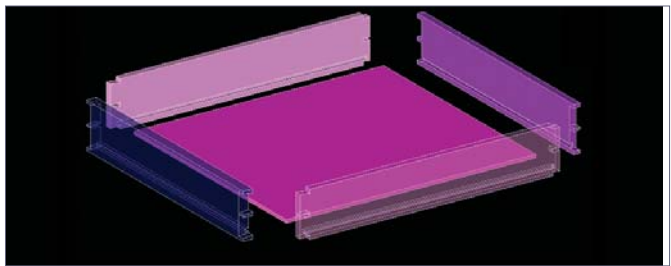
**STEP 8:** Select the *Extrude* tool, highlight the rectangle and extrude .250 inch vertically. The drawer bottom is now created. Using alignment tools, it is easy to correctly position the drawer bottom in the drawer. Finally, using the *Boolean Subtract* tool, subtract the bottom



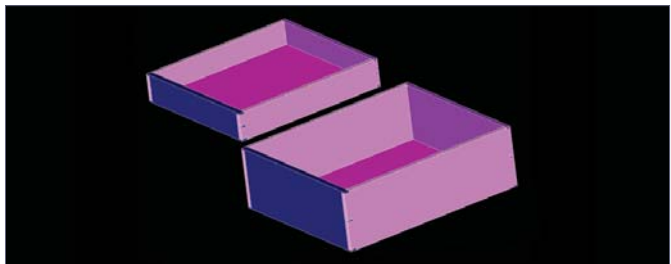
from each of the drawer parts to create what will become a plow cut when made out of wood.



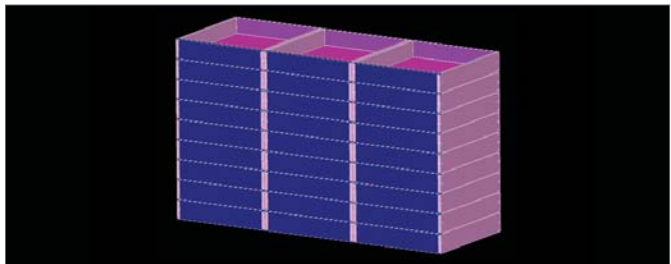
THE DRAWER SIDES HAVE BEEN MADE TRANSPARENT AND IT IS EASY TO SEE THE BOTTOM NOW IN PLACE. EVERY SOLID MODELING PROJECT YOU MAKE FOLLOWS A SIMILAR WORKFLOW AS THIS DRAWER EXAMPLE.



WITH THE DRAWER EXPLODED IT IS EASY TO SEE THE PARTS ARE CORRECT. AT THIS POINT YOU CAN HAVE ARGON MAKE YOUR WORKING DRAWINGS.



THE LARGER DRAWER IS A COPY OF THE SMALLER AND "STRETCHED" TO A NEW SIZE. THIS IS THE POWER OF SOLID MODELING—THE ABILITY TO MAKE CHANGES AND PERFECT YOUR WORK BEFORE YOU BUY MATERIALS! THERE IS NOTHING MORE VALUABLE THAN YOUR TIME—SOLID MODELING WILL DEFINITELY MAKE YOU A MORE PRODUCTIVE WOODWORKER.



WITH ONE DRAWER YOU CAN CREATE DOZENS. THESE 27 DRAWERS ARE CLONES OF A SINGLE DRAWER AND THIS MODEL TOOK LESS THAN 30 SECONDS TO MAKE WITH ARGON'S POWERFUL TOOLS. EACH AND EVERY ONE OF THESE DRAWERS ARE THE OFFSPRING OF THE 2D DRAWING MADE AT THE BEGINNING OF THIS EXERCISE.

Certainly much more complex shapes are possible with *Argon*, this is the proverbial "tip of the iceberg." Whether you are creating paper clips or airplanes, *Argon* can help you reach a level of productivity and quality that will change your life forever!

## Argon Makes Prints Almost Effortlessly!

If you have to communicate ideas to yourself or others, **Argon** will produce professional drawings with a few mouse clicks. Here's how to make perfect exploded drawings:

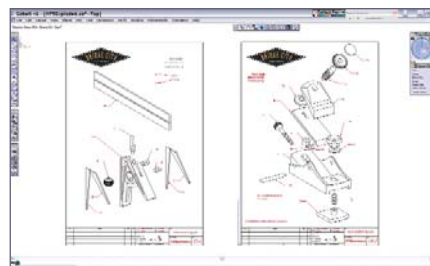
**STEP 1:** Save the completed model as a new file.

**STEP 2:** Set the "nudge" distance to .250 inches. This determines the distance your model parts move when "nudged" with one of the four arrow keys (*up, down, left or right*) on your keyboard.

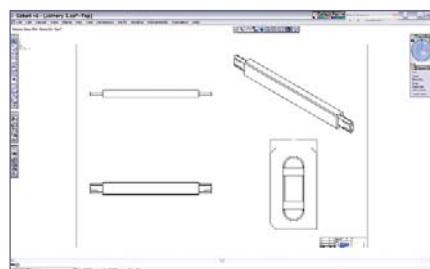
**STEP 3:** In the *Trimetric View*, explode your model parts (*using the arrow keys*) so that all components are clearly visible.

**STEP 4:** Select all of your components (*so they are highlighted*) and use the *Model to Sheet* command to create drawings similar to those we use at Bridge City (*top right*). Once your 3D model is complete, making 2D drawings is super fast. Each drawing featured took less than 20 minutes to make!

**NOTE:** **Argon** has stock borders and title blocks or you can make your own, which you only need to do ONCE. Each time



PROFESSIONAL QUALITY PRINTS TAKE MINUTES (NOT HOURS) IN ARGON. YOU MAY NOT HAVE A NEED TO MAKE DETAILED ASSEMBLY DRAWINGS BUT THE CAPABILITY IS THERE AND IT IS FAST.

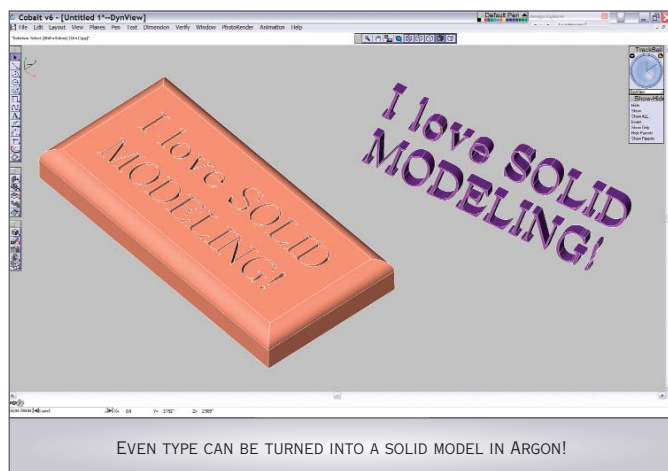


YOU WILL OFTEN NEED TO MAKE SIMPLE THREE OR FOUR VIEW DRAWINGS TO COMMUNICATE YOUR IDEAS WITH YOURSELF OR OTHERS. HERE, A SIMPLE FOUR VIEW DRAWING OF A TABLE STRETCHER WAS MADE FROM A SOLID MODEL (NOT SHOWN). ALL FOUR DRAWINGS IN THIS EXAMPLE WERE DRAWN AND POSITIONED IN THIS PRINT BY ARGON IN LESS THAN FIVE SECONDS!

you use the *Model to Sheet* command, simply select your custom template for the drawing.

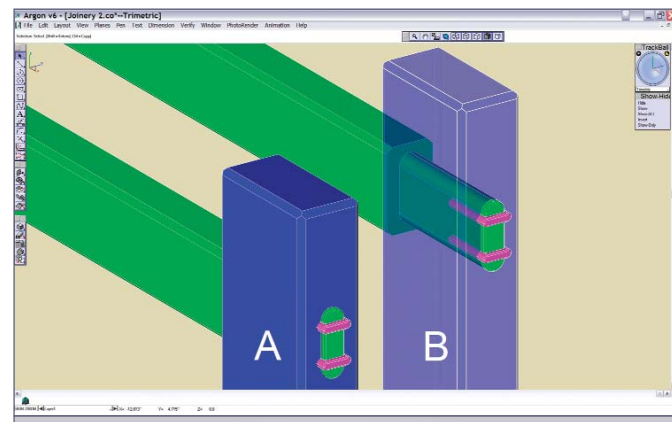
## The Sky Is The Limit!

In this illustration, use any font and extrude it to make 3D solid type. A copy of the solid type was centered and Boolean "subtracted" from the sign board creating the negative type impression. *This model takes approximately 3 minutes!*



We believe you will truly love making solid models. Solid modeling is the most fun woodworkers can have on a computer. The big benefit is planning all of your construction details before you set foot in the shop. By clearly defining all of your

future actions in the shop, you become more efficient. More important, solid modeling gives you a pain-free method to reject ideas and dramatically decreases the ability to pollute the visual landscape! In addition, **Argon** on a laptop allows you to extend your woodworking wherever you go, on the plane or train...*what's not to like about solid modeling?*

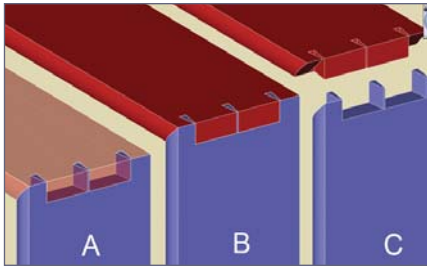


BEAUTY IS IN THE DETAILS. IN MOST NON-PROFESSIONAL WORK, AND SAD TO SAY IN SOME PROFESSIONAL WORK, THE DETAILS DON'T EXIST OR ARE AFTERTHOUGHTS. USING ARGON, EVERY SINGLE DETAIL CAN BE WORKED OUT BEFOREHAND SO WHEN YOU STEP INTO YOUR SHOP YOU HAVE A CLEAR UNDERSTANDING OF WHAT YOUR PIECE WILL LOOK LIKE WHEN COMPLETE. THIS IS HOW REFINED WORK IS PRODUCED AND ARGON MAKES IT EASY TO CREATE WORK WITH MEANING.

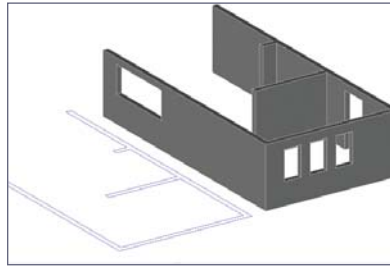


## Solid Modeling Has Hundreds Of Uses!

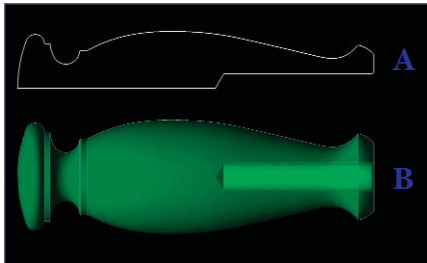
Your imagination is the only limit to the uses of solid modeling. Here are a couple of simple examples:



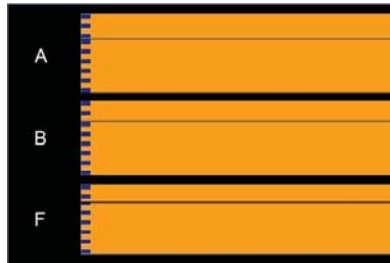
HERE'S A SIMPLE SOLID MODEL THAT ILLUSTRATES THE RARE MITERED DOVETAIL JOINT. MODELS LIKE THIS OFFER CLARITY TO NON-OBVIOUS PROCESSES AND MAKE AESTHETIC DECISIONS MUCH EASIER. THIS MODEL AND THE "CLONES" TOOK FIVE MINUTES TO MAKE.



THIS SIMPLE WIREFRAME FLOOR PLAN WAS EXTRUDED TO CREATE A VIRTUAL REPRESENTATION OF A ROOM. ALTHOUGH THIS ILLUSTRATION IS CRUDE, MODELS SUCH AS THIS CAN BE DETAILED DOWN TO THE WALL OUTLETS IF YOU CHOOSE! IT IS ALSO THE EASIEST WAY TO MAKE "DIFFICULT DECISIONS" REGARDING CABINETRY, WINDOW LOCATIONS OR EVEN WALL COLORS! ONCE YOUR ROOM IS MEASURED, A MODEL LIKE THIS TAKES



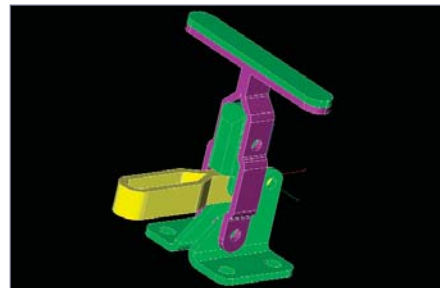
SPINDLE WORK IS SO FAST, "A" TURNS (PUN INTENDED) INTO "B" WITH A MOUSE CLICK! NOW EVERY FILE IN YOUR SHOP CAN HAVE A BEAUTIFULLY DESIGNED HANDLE. THINK OF ALL THE POSSIBILITIES!



SOLID MODELING HELPS PREVENT AMATEURISH JOINERY DISASTERS. FIGURES "A" AND "B" ARE ARGUABLY THE ONLY WAY TO MAKE A BOX/LID COMBINATION WITH BOX JOINTS. WHAT YOU TYPICALLY SEE IS THE SORRY EXAMPLE "F" WHERE THERE IS NO HARMONY BETWEEN THE JOINERY OF THE TOP AND THE BOTTOM. THIS CAN, AND SHOULD BE, COMPLETELY AVOIDED. IT IS MUCH MORE ENJOYABLE TO "DISCOVER" THIS MISTAKE IN THE PLANNING STAGES THAN TO LEARN ABOUT IT AFTER YOUR PROJECT IS DONE.

## Solid Modeling Is Everywhere

The power of solid modeling is all over the Internet! **Argon** accepts the most popular file formats for import and export. With **Argon**, you can have family and friends download a *free* solid model viewer and you can email your **Argon** models for their review and feedback *before* you commit your valuable time to the shop. In addition, more and more companies are making their products available on the web for download in solid model format. This is an amazing revolution that is occurring—*don't you think it's time to "hop on board" when it's this easy and affordable?*



OFTEN TIMES YOU CAN DOWNLOAD SOLID MODELS FROM THE WEB. MORE AND MORE MODELS ARE BECOMING AVAILABLE. THIS DE-STA-CO TOGGLE CLAMP MODEL WAS AVAILABLE FOR FREE DOWNLOAD AT: [HTTP://WWW.DESTACO3DCAD.COM](http://www.destaco3dcad.com)

### OUR SPECIAL OFFER

Our incredible special offer to Founder's Circle members for **Argon** is \$795. **Argon** retails for \$995. This is a \$200 SAVINGS! You cannot beat this deal!

As always our 90-day money back guarantee applies. In addition, each Argon owner is entitled to 30 days free technical support from Ashlar-Vellum. This is simply one of the best CAD offers in America and we are pleased to be able to share it with you.

Thank you for taking the time to consider this very special offer. Don't delay because this deal goes away soon.

ARGON CD-ROM & MANUAL SET **\$849.00 (FOUNDERS \$795.00)**  
**ARGON.....\$995.00 SAVE \$200!**

Shipping & Handling is \$9.95. Foreign orders are charged at cost.  
 Please allow 2 to 3 weeks for delivery.

ARGON E-VERSION (EXCLUDES CD-ROM & MANUAL)  
**ARGONE.....\$749.00 (FOUNDERS \$699.00)**

ARGON E-VERSION requires web download. The printable manual is built into the program.

Easy Pay Option: 12 Credit Card Installments  
 plus S&H Available upon request.



**SAVE \$200!**

Automatic Orders  
 will not be placed  
 for ARGON.



#### WINDOWS MINIMUM SYSTEM REQUIREMENTS

- \*WINDOWS 98
- \*PENTIUM II
- \*VIDEO CARD
- \*256 MB RAM
- \*150 MB FREE HARD DRIVE SPACE
- \*CD-ROM

SUPPORTED BY:  
 WINDOWS 2000/NT/XP/ME

#### MAC OS MINIMUM SYSTEM REQUIREMENTS

- \*MAC OS 9.2.2
- \*G3 NATIVE
- \*VIDEO CARD
- \*256 MB PHYSICAL RAM
- \*VIRTUAL MEMORY SET TO 512 MB
- \*150 MB FREE HARD DRIVE SPACE
- \*CD-ROM

SUPPORTED BY:  
 MAC OS CLASSIC/X (10.2 JAGUAR)/9.2.2

# Save BIG BUCKS On Our Japanese Hand Saw Special!

Purchase ANY TWO professional hand saws and get a THIRD saw at HALF PRICE!  
(The discounted saw will be the lesser valued of the three.)



## There Isn't A Joint You Can't Confidently Cut With Unprecedented Accuracy And Speed Using The JS-1 Dozuki Saw

No shop should be without this phenomenal cutting tool, regardless of how many saws you currently own. With a maximum cutting depth of 1- ", our 32 teeth per inch **JS-1 DOZUKI SAW** is an extremely fine tooth backsaw used primarily for cutting joints. Perhaps the finest Dozuki saw in America today, the blade is an astonishing 0.20mm thick, which is only eight thousandths of an inch! It simply is the smoothest cutting saw we have ever used! Once cut, the wood feels and appears like it was hand planed. We guarantee you have not used a saw that works or cuts as well as this professional Dozuki back saw.

## Our Most Popular Fast Cutting General Purpose Saw

The Ryoba is the most popular saw used by woodworkers in Japan. Our **JS-2 Ryoba** has crosscut teeth on one edge and rip teeth on the opposite edge—it makes great economical sense. This professional grade saw comes in various sizes in Japan, with progressively larger teeth as the saw edges become longer. Our Ryoba is perfectly sized for furniture or cabinetmakers and also works well for finish carpenters. The crosscut saw has 15 teeth per inch, the rip saw 8 teeth per inch. Remember, let the saw do the work and you won't believe how easy it is to cut wood by hand!

## For Fine Deep Cuts, The JS-3 Is The Perfect Choice

This exquisite saw is used for fine, deep cuts and deep cheek joinery. A very popular furniture making saw, our Kataba has 20 teeth per inch dispersed over nearly nine inches. Because this is not a backsaw, blade thickness is 0.40mm (0.016"). The **JS-3 KATABA SAW** is the tool of choice when you need cuts deeper than possible with a Dozuki. Perfect for tenons and larger dovetails as well as coarse flush cutting and general purpose sawing needs. It is a delightfully efficient and accurate cutting tool with a perfect balance.

## A Zero Set Saw For Perfect Flush Cuts

Anytime you want to cut a protruding member flush with a surface, this is the tool for the job. Unlike other flush cutting saws, this blade is replaceable. The **JS-4** works perfectly for cutting back protruding joinery including dovetails, dowel joints, mortise and tenons and much more. There is ZERO set to the fine teeth (32 per inch) and therefore it is almost impossible to score or scratch your reference surface. The **JS-4** cuts on the PULL stroke and is extremely fast cutting. We do not believe you will find a better performing flush cut saw, nor one that is easier to use, anywhere.

Tool	Overall Length	Cutting Length	Blade Thickness
JS-1	20-3/8"	7-7/8"	0.20mm/0.008"
JS-2	23-3/8"	8-3/4"	0.49mm/0.0195"
JS-3	21-1/2"	8-7/8"	0.40mm/0.016"
JS-4	16-1/4"	6-3/8"	0.20mm/0.008"
JS-5	15-1/4"	5-1/2"	0.20mm/0.008"
JS-6	23-3/8"	8-3/4"	0.49mm/0.0195"

## Here's A Small Dozuki Saw For Small Or Delicate Joints

For smaller, more delicate joints, such as tiny dovetails, added control over your saw becomes a necessity. With the **JS-5** in your hand, there isn't a joint you can't cut with confidence, speed and unprecedented accuracy. Like that of our JS-1, the blade of the **JS-5** is a mere 0.20mm (0.008") thick, giving you ultra precise cuts every time. The **JS-5** blade also shares the same depth of cut as the JS-1: roughly 1- inches. The important difference between the two saws is the cutting length, with the **JS-5** giving you a heightened sense of control for all your intricate joinery projects.

## Here's A Saw With Two Distinct Crosscut Grinds Suitable For Your Needs

The Ryoba style saw is without question, the most frequently used hand saw in Japan. One side is for crosscutting and the other for ripping. Our **JS-6** looks like a Ryoba but is substantially different. This saw has two distinct crosscut grinds, one with 15 teeth per inch, and the other with 20 TPI. The fine side of the **JS-6** is used for smaller cross-section cuts or where you desire a finer finish on the end grain. This was a logical design choice because our research indicates that very few of our customers rip saw by hand.

JS-1 DOZUKI BACK SAW	
1101-130.....	\$89.00 (FOUNDERS \$80.10)
JS-1 REPLACEMENT BLADE	
1101-130RB.....	\$39.00 (FOUNDERS \$35.10)
JS-2 RYOBA RIP/CROSSCUT SAW	
1101-132.....	\$78.00 (FOUNDERS \$70.20)
JS-2 REPLACEMENT BLADE	
1101-132RB.....	\$39.00 (FOUNDERS \$35.10)
JS-3 KATABA SAW	
1101-134.....	\$79.00 (FOUNDERS \$71.10)
JS-3 REPLACEMENT BLADE	
1101-134RB.....	\$39.00 (FOUNDERS \$35.10)
JS-4 FLUSH CUT SAW	
1101-170.....	\$59.00 (FOUNDERS \$53.10)
JS-4 REPLACEMENT BLADE	
1101-170RB.....	\$24.95 (FOUNDERS \$22.45)
JS-5 6" DOZUKI SAW	
1101-171.....	\$59.00 (FOUNDERS \$53.10)
JS-5 REPLACEMENT BLADE	
1101-171RB.....	\$24.95 (FOUNDERS \$22.45)
JS-6 DOUBLE CROSSCUT SAW	
1101-180.....	\$78.00 (FOUNDERS \$70.20)
JS-6 REPLACEMENT BLADE	
1101-180RB.....	\$39.00 (FOUNDERS \$35.10)

Custom Engraving: 5 characters.

## Specifications

**Handle:** Hand wrapped with a special braided cord and the ends capped with brass ferrules.

**Blade:** High grade Japanese steel and correctly tempered for consistent golden color.



## A Small Hammer Prevents You From Overpowering Your Intent, Eliminating Oversized And Unintentional Strike Marks

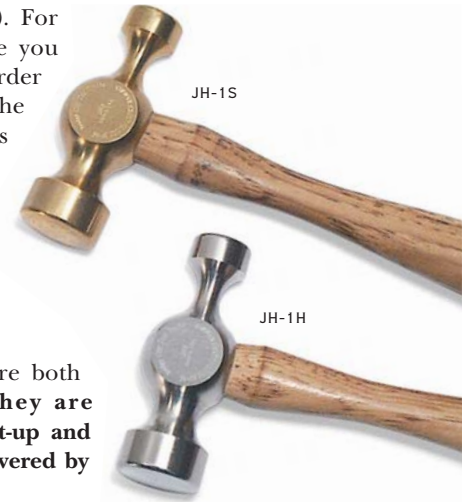
One of the most enjoyable aspects of working wood is using tools sized for the job. When it comes to hammers, invariably we use a tool much too large or heavy for the task. Think about it. Hammers come in almost every imaginable size and shape. What we have created are two small hammers designed specifically for the bench woodworker. For inserting dowels, pins, or tapping delicate joints together, a dead-blow mallet just does not cut the mustard. For these sensitive tasks and a myriad of others, I've always relied on a small, antique hammer purchased at a garage sale. With the introduction of our two **JH-1** Jointmaker's Hammers, this positive experience is available to you. A small hammer prevents you from overpowering your intent, eliminating over-sized and unintentional strike marks.

The long, willowy neck of our lacquered hickory handle, combined with the gracefully tapered end, is simply a joy to hold. The 10" handle offers a marvelous sense of accuracy and control that "fat" handled hammers simply cannot provide.

Our **JH-1** Jointmaker's Hammers come in brass or a stainless steel head. They are double faced for delicate work and are securely blind wedged to the handle. The head measures  $9\frac{1}{4}$ " and  $1\frac{3}{4}$ " in diameter and weighs  $3\frac{1}{2}$  ounces. Use the brass hammer with its soft face for those applications where you definitely do not want to leave a strike mark (*never use a soft face*

hammer for nails or brads). For those applications where you may want to persuade a harder material, we recommend the **JH-1** Jointmaker's Hammers with a stainless steel head. See for yourself how these inexpensive tools can add richness to your woodworking experience.

Important note: These are both soft-face hammers. **They are designed to become beat-up and disfigured and are not covered by our lifetime warranty.**



### JH-1S BRASS HAMMER

**1102-074.....\$49.00 (FOUNDERS \$44.10)**

### JH-1H STAINLESS STEEL HAMMER

**1102-075.....\$49.00 (FOUNDERS \$44.10)**

**BUY BOTH & SAVE \$5!**

### BRASS & STAINLESS STEEL HAMMER SET

**1111-013.....\$93.00 (FOUNDERS \$83.70)**

*Custom Engraving: 5 characters.*



**ON  
SALE!**



OUTSIDE CALIPERS ARE EASILY AND PRECISELY SET WITH THE TT-1 TURNING TREE.



TO SET YOUR INSIDE CALIPERS, SIMPLY SET YOUR OUTSIDE CALIPERS AND TRANSFER THE SETTING FROM ONE TO THE OTHER.



INDIVIDUAL SECTIONS OF THE TT-1 TURNING TREE ARE ALSO HANDY AS CIRCLE TEMPLATES.

ACCURACY: +0.005", -0.000" TOLERANCE ON EACH DIAMETER.  
TREE: COATED STEEL, RUST PROOF.  
BASE: ROSEWOOD, PROTECTIVE FOOT PADS.

## Finally, A Tool Designed For Wood Turning That Allows You To Quickly And Accurately Set Your Outside Calipers!

The **TT-1 TURNING TREE** is a circular ruler designed primarily for furniture makers who use turnings in their work. The tolerance on each diameter is +0.005", -0.000", insuring that you will never again turn an undersized part.

The **TT-1** is made of nine steel sections containing four precisely turned diameters for setting the distance of outside calipers. The major diameter of each section is marked with the diameters of all four "rings" which make up that section. All in all, there are 36 different reference sizes. The rings are sized by  $\frac{1}{16}$ " to correspond with the most common drill sizes found in the wood shop (*the largest is sized by  $\frac{1}{4}$ "*). Each color band represents a one quarter inch segment stepped by sixteenths. Individual sections can be removed and kept in your apron pocket as a quick reference while you are turning. Sections can also be used to size existing holes and are handy as circle templates.

The **TT-1** comes with a beautiful rosewood base that displays and protects your investment. The **TT-1** is a must for furniture makers who use turned components in their work.

### TT-1 TURNING TREE

**1102-054.....\$169.00 (FOUNDERS \$152.10)**

**\$143.65**

**\$129.29**

*Custom Engraving is Not Available.*

# CT-11 12° Low Angle Smoothing Plane

It is our pleasure to introduce to you the eleventh edition of our popular commemorative tools. Here are the details....



## The Concept

A plane iron seated twelve degrees to the sole is the practical limit for an adjustable iron plane. With a 25 degree iron, this creates an attack angle of 37 degrees. With this lower attack angle, you can work harder woods with less effort, and plane end grain, which are typically not easy with a bench plane or our CT-10 plane. The most significant aspect of lowering the attack angle is the corresponding reduction in force needed to work the plane.

## The Plane Iron

Beginning with an annealed piece of A2 tool steel the iron is milled to size, heat treated to Rockwell 60-62 and cryogenically tempered. This allows for extremely sharp edges that hold longer than traditional processes. The iron is then lapped, sharpened and is ready to use out of the box.

## The Sole

Beginning with a three pound stainless steel billet we CNC mill the flat and plane iron seat. When done correctly, the iron will seat precisely in place preventing vibration and chatter from working its way to the cutting edge which diminishes the function. The interior top surfaces of the toe and heel are capped with rosewood infills and when the plane is assembled and properly tensioned, the sole is flattened. Like the iron, the plane body is ready to use out of the box.

## The Sides

The combination of the stainless steel sole with brass sides is not only gorgeous, but impossible to take apart. This double-dovetailed joinery has produced more questions than any other aspect of any of our tools! (Note: Because this is an extreme low angle plane with minimal side heights, it is not designed to be used on its side for "shooting" a square edge.)

## The Blade Adjustment Mechanism

We use a modified "Norris" style adjustment mechanism that changes both the depth of cut and the blade angle to the sole. One full revolution of the blade adjustment knob changes depth of cut by 0.003". An eighth of a revolution will change the shaving thickness by 3.7 ten-thousandths (0.00037") of an inch.

## The Plane Iron Cap

The solid brass plane iron cap is milled to seat dead flat against the iron. The mass is another vibration killer allowing all of your energy to be focused at the cutting point.

## The Rear and Front Totes

The CT-11 features a "four finger" sculpted rosewood rear tote visually free from the typical spine bolt. The rear tote is built around a stainless steel spine that is permanently fixed to the base plate that dovetails into the sole. The results are not only unbelievably strong and functional, but beautiful as well. The front tote is hand turned around a solid brass ferrule that also works as the adjustable throat locking knob. There are

## An Important Note From John

There is an old saying that writers should never proof read their own work...this is the reason why.

Traditional low angle smoothing plane irons are ground to 20 degrees plus a 5 degree micro-bevel, and when seated in a 12 degree plane, the attack angle is 37 degrees. **This is how we are shipping the CT-11.** Our original copy stated the primary grind at 25 degrees with a 5 degree micro-bevel for a 42 degree attack angle—which you now know is in error. Thank you to those who brought this to my attention, and I apologize for the confusion.

That aside, it may make sense for CT-11 owners to have an additional iron with an included angle of 30 degrees for use in harder woods. Such an iron would dramatically shorten the sharpening cycles when changing the attack angle to address the nuances of wood.

We are making available a small number of irons ground to an included 30 degree angle available for \$59. (*Customers on the Automatic Order Program will be ordered this accessory iron.*) We have also modified the box and case inserts to provide protective storage for one spare iron. In addition, we have been asked for additional spare irons and they too are available for \$59.

Five degrees can make an enormous difference in cutting ability depending on the variables. For those of you who understand the value of your time, and/or the real subtleties of hand planing wood, this additional iron option may be of interest to you.

John Economaki  
President

no visible screws or bolts to hinder the lines of this flawlessly executed hand turning by Mark Stevens. Both totes are lacquered—this is the preferred finish for a tool that may see sweaty hands. (*For those who prefer a waxed finish, please specify at the time of your order.*)

## Summary

For our tool makers, these limited Commemorative Tools represent the culmination of years of refining and redefining the manufacturing and design details that elevate these tools above mass produced mediocrity. Thank you for taking the time to read about the amazing CT-11 12° LOW ANGLE SMOOTHING PLANE!

## Specifications

**Weight:** 5.5 lbs. **L=**13", **W=** 2.76", **H=** 5.65" **Sole Length:** 11.56"  
**Cutting Width:** 2.1" **Attack Angle:** 37° (12° Bed, 20° Primary Grind, 5° Micro-Bevel) **Depth Adjustment Per Revolution:** .003"

**You must be a Founder's Circle Member to purchase the CT-11.**  
*Please specify Wax or Lacquer finished handles at the time of order.*  
*Six months, zero interest Easy Pay Option available.*

CT-11 12° LOW ANGLE SMOOTHING PLANE  
**1100.....\$895.00**  
CT-11 12° LOW ANGLE SMOOTHING PLANE WITH CASE  
**1100C.....\$1015.00**  
CT-11 REPLACEMENT IRON  
**1101-183RB.....\$59.00 (FOUNDERS \$53.10)**  
CT-11 ACCESSORY IRON (30° ANGLE)  
**1101-183AB.....\$59.00 (FOUNDERS \$53.10)**

*Custom Engraving: 24 characters.*

**Important Note:** A 50% deposit is required to secure your order.  
*Delivery is scheduled to begin June 2004.*





## Here Are Three Small Low Angle Planes That Provide BIG Results!

HP-3



HP-4



HP-5



Using a tool sized for the job is one of the paramount lessons in successful woodworking. For the myriad of tasks in your woodshop that are better served by smaller planes, we are pleased to offer you the **HP-3 SMALL BLOCK PLANE**, **HP-4 CHAMFER PLANE** and **HP-5 SMALL BLOCK PLANE**.

Each plane body is precisely milled from solid 360 brass alloy as is the plane iron cap creating a weight and balance to the tool that simply invites use. As a final touch, the cap iron knob has a matching rosewood inlay.

With the cutting width just under 1", these three small planes feature an adjustable throat and a very fine blade adjustment mechanism (*36 threads per inch*). The iron is cryogenically treated and hardened (*Rc 60-20*) A2 tool steel, and the back is lapped to a RMS .5 finish. Our planes are ready to use right out of the box.

The attack angle of the **HP-3** and **HP-4** is 42 degrees (*12 degree bed angle, 25 degree primary iron grind, 5 degree micro bevel*). The **HP-3** is an amazing tool for thinner edges and flush trimming.

Hard corners in wood are almost never desirable because of the tendency to fracture. With an overall length of 5", the **HP-4 CHAMFER PLANE** is perfect for box makers, thousands of furniture details and a host of similar needs. This extraordinary tool is easy to use and creates chamfers that are unobtainable by cruder means. The solid brass fences are faced with rosewood rails and slides on stainless steel rods that lock in place with a hex key wrench. With the plane set to take a thin cut and the throat opening properly set, the fences adjust to determine the final width of the chamfer. (*Chamfer width ranges from a few thousandths of an inch up to 7/8" in width.*) On practice stock, chamfer a corner to confirm your set-up. The wider the chamfer, the more passes you will take with the **HP-4**. The

results are perfect! Furthermore, where chamfers converge, the result is a perfectly executed mitered hard line.

The factory attack angle of the **HP-5 SMALL BLOCK PLANE** is 52 degrees. Compared to the **HP-3** and **HP-4**, a ten-degree difference is huge in performance when needed. The **HP-5** is suitable for those small jobs where grain blowout can wreck your piece. Use this plane on all extremely hard woods like cocobolo, ebony, most other exotics and in all cases where grain switchback is obvious. Typical uses for the **HP-5** include edge work on stock under 1/2" thick, chamfers and important facet details. When used properly, the **HP-5** will create edges facets and chamfers that are perfect where the **HP-3** will begin to lift grain. Small box makers, luthiers, fly rod makers, case makers, furniture makers, toy makers and others who work with small stock or fine details will greatly appreciate the benefits of the **HP-5**.

There is no greater joy than working with tools that provide dead accurate and beautiful results. We are confident that you will find the **HP-3**, **HP-4** and **HP-5** to be one of your most cherished planes and a faithful tool that provides superb results. We are thrilled with their abilities and you will be, too.

### HP-3 SMALL BLOCK PLANE

**1101-173.....\$239.00 (FOUNDERS \$215.10)**

### HP-4 CHAMFER PLANE

**1101-174.....\$329.00 (FOUNDERS \$296.10)**

### HP-5 SMALL BLOCK PLANE

**1101-182.....\$239.00 (FOUNDERS \$215.10)**

### HP-3/HP-4/HP-5 REPLACEMENT IRON

**1101-173RB.....\$29.00 (FOUNDERS \$26.10)**

*Custom Engraving: HP-3, HP-4 & HP-5: 6 characters.*

Tool	Weight	Length	Width	Height	Sole Length	Cutting Width	Attack Angle
<b>HP-3</b>	10.7 oz.	3.80"	1.30"	1.65"	3.25"	0.94"	42° (12° Bed, 25° Primary Grind, 5° Micro-Bevel)
<b>HP-4</b>	11lb. 3.3 oz.	5.00"	3.50"	2.50"	3.25"	0.94"	42° (12° Bed, 25° Primary Grind, 5° Micro-Bevel)
<b>HP-5</b>	13.1 oz.	3.75"	1.30"	1.80"	3.25"	0.94"	52° (22° Bed, 25° Primary Grind, 5° Micro-Bevel)



FIGURE 1. WITH YOUR STOCK FLAT, CLAMP THE MITER STITCH IN PLACE WITH C-CLAMPS OR OTHER CLAMPS. (SOMETIMES IT IS A GOOD IDEA TO TAPE YOUR JOINT AS PICTURED HERE.)



FIGURE 2. WITH THE MITER STITCH IN PLACE, YOUR PROJECT IS READY TO "DRY CLAMP" WHICH ALLOWS YOU TO CHECK FOR PROBLEMS.



FIGURE 3. ONCE YOU HAVE CHECKED YOUR MITER JOINT, APPLY GLUE AND CLAMP. WITH A MITER STITCH, YOU WILL GET PERFECT RESULTS.



FIGURE 4. IT IS EASY TO SEE HOW THE MITER STITCH WORKS. THE CLAMPING PRESSURE IS DIRECTLY IN-LINE WITH THE MITER JOINT. THERE IS NO STOCK DEFLECTION WHATSOEVER.



FIGURE 5. FOR LONGER EDGE MITERS, YOU CAN GANG SEVERAL MITER STITCHES TOGETHER USING READILY AVAILABLE 3/8" DRILL ROD. THE ROD KEEPS THE CENTER MITER STITCHES FROM SLIPPING.



FIGURE 6. HERE'S A MITER JOINT THAT IS PERFECTLY ALIGNED WITH ONE CLAMP ON THE CENTER MITER STITCH! PRACTICALLY YOU WOULD NOT LIKELY DO THIS, BUT IT CLEARLY ILLUSTRATES THE STRENGTH OF THE SYSTEM.

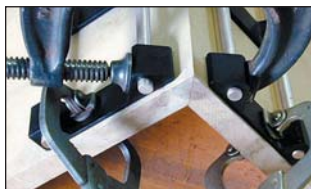


FIGURE 7. A SINGLE MITER JOINT IS ALMOST IMPOSSIBLE TO CLAMP. NOT ANYMORE!



FIGURE 8. THE DRILL ROD OFFERS THE NECESSARY RESISTANCE TO KEEP THE CENTER CLAMPING PADS FROM SLIPPING WHEN USING MULTIPLE MITER STITCHES.



FIGURE 9. BY REVERSING THE MITER STITCH, YOU CAN CLAMP OCTAGONAL PROJECTS! (FOR PURPOSES OF CLARITY THE MITER STITCH IN THIS PHOTO IS TOO CLOSE TO THE JOINT.)

## This Ingenious Little Tool Will Allow You To Close Miters With Inexpensive Clamps And Give You the Joint Intended And The Satisfaction Of KNOWING Your Work Is Solid



Miter joints are popular because they conceal end grain or allow for a seamless appearance on corners. Here is a clamping concept that works beautifully and allows you to get "light-tight" miter joints using inexpensive clamps.

### Please Meet The Miter Stitch®....

Each **MITER STITCH®** Set consists of two anodized aluminum clamping pads. When correctly clamped opposite each side of the miter seam (*Fig. 1*), an inexpensive clamp will allow you to close the joint perfectly. It's that easy. The **MITER STITCH®** is designed to clamp 90-degree miters or 45-degree miters (*Fig. 9*).

When your **MITER STITCHES** arrive, the first task is to cut and attach (*with thin double-stick tape*) 120 grit sandpaper to the bottom of each pad. This is very important and prevents the tool from slipping. You only need to do this once as this important gripping surface will last the lifetime of the tool.

**MITER STITCHES** can be used alone (*Fig. 3*) or in conjunction with other clamps, most commonly with band clamps. Band clamps, another indispensable shop tool, have a nasty habit at times of deforming your work when tight and can actually be over-tightened to a point where they open up the miters! **MITER STITCHES** only allow you to apply clamping pressure directly inline with the two halves of the joint (*Fig. 4*). It works absolutely perfect!

Each **MITER STITCH®** clamping pad has two holes in each end. Placing readily available 3/8" drill rod in each of these holes allows you to "gang" **MITER STITCHES** for longer joints (*Fig. 5*). The outside **MITER STITCHES** are clamped to your stock, and the center **MITER STITCH(ES)** float on the drill rod. In this configuration, the drill rod offers the necessary resistance to keep the center clamping pads from slipping. It works beautifully (*Fig. 8*)!

If you are doing an edge miter that is not part of a closed box, you are dealing with one of the most difficult to clamp joints known to man. Using **MITER STITCHES** makes this so easy and fast it is amazing. It is now possible to clamp only one corner!

Each **MITER STITCH®** Set consists of two clamping pads. Add one, four or more **MITER STITCH®** Sets to your shop today and never again worry about—GAPOSIS! The four **MITER STITCH®** Set is our best buy!

ST-4 MITER STITCH® (2pc)

1101-159.....\$10.95 (FOUNDERS \$9.85)

MITER STITCH® SET

GET 4 SETS (8PC) FOR.....\$39.95 (FOUNDERS \$35.95)

*Custom Engraving is Not Available.*



## Our Popular Universal Squares Are Five Tools In One



We are very pleased to offer you these three inexpensive squares and believe you will find them indispensable after just one use!

Precisely CNC milled from aluminum, these squares will stay true because they are

solid metal. The US-3 is super handy and easily fits into an apron pocket. The US-4, slightly bigger is a good all around bench square. And

use the US-6 for larger stock and squaring needs. All three have the following specifications:

**Angle Accuracy:** Plus or minus .002" over major length, both 90 and 45 degrees.

**Graduations:** Graduations are laser etched and will not come off. Available in either English or metric, each square features two rules, one aligned with the outside face of the sole ( $\frac{1}{32}"$  or .5mm) and one aligned with the inside face of the sole ( $\frac{1}{16}"$  or 1mm).

**Finish:** Aluminum Oxide (harder than steel).

**Power Tool Guide:** Use as a square or miter guide for power tools that can be



USE THE US-6 TO SET BLADE HEIGHT AND TO CHECK THE BLADE FOR SQUARENESS TO THE TABLE.

operated safely with one hand, (*sabre saws in particular*). Hold the Universal Square in place with one hand and guide the tool with the other.

**Height Gage:** Use the vertical rule on the outside edge of the square as a precision height gage. This is perfect for setting saw blade heights, router heights and shaper cutter heights as well as measuring inside dimensions.

**Marking Gage:** The rule adjacent to the milled slot is indexed to the inside face of the sole. Simply place a pencil or awl along the dimension of your choice and slide the square and marking tool together along your stock to make a precise parallel line.

**Hook Rule:** Align your universal square flush with your stock and read the width using the rule adjacent to the slot.

**Protractor:** Laying out angles is easy. The center of the protractor is the intersection of the outside edge of the square and the inside face of the sole.

**Centering Rule:** On each side of the sole is a small centering rule.

PLEASE SPECIFY ENGLISH OR METRIC GRADUATION WHEN ORDERING.

US-3 UNIVERSAL SQUARE

1101-163.....\$35.95 (FOUNDERS \$32.35)

US-4 UNIVERSAL SQUARE

1101-165.....\$39.95 (FOUNDERS \$35.95)

US-6 UNIVERSAL SQUARE

1101-167.....\$49.95 (FOUNDERS \$44.95)

UNIVERSAL SQUARE SET

550.....\$119.00 (FOUNDERS 107.10)

Custom Engraving is Not Available.

## Zero Glare Rules For "Over 50" Eyes

Our BR-6 POCKET RULE and BR-12 BENCH RULE are the finest and most useful rules available. These "zero glare" triangular rules defy logic. The closer you get them to a light source the easier they are to read! Try reading a satin chromed rule held next to a halogen light – it doesn't work at all.

Each BR-6 and BR-12 comes with a solid brass hook that can easily be attached thereby transforming each rule into a hook rule that allows you to read dead accurate length measurements from the end of your stock without any hassles. It doesn't get any easier than this!

The BR-6 and BR-12 are simply the finest rules you will ever have in your shop.

BR-6 ZERO GLARE POCKET RULE (6")

1101-124.....\$14.95 (FOUNDERS \$13.46)

BR-12 ZERO GLARE BENCH RULE (12")

1101-137.....\$19.95 (FOUNDERS \$17.96)

Custom Engraving is Not Available.

### Graduations

- Left to Right 32nds • Left to Right 16ths • Right to left 16ths
- Millimeters • Centering Rule • Offset Rule



BR-6

### Specifications

Height: 0.56"

Width: 0.66"



BR-12



# The World's First "Straight Edge" For Corners!



THIS AMAZINGLY  
SIMPLE TOOL WILL ALLOW YOU TO  
LAY OUT DOVETAILS IN EITHER A 6:1 OR 8:1  
RATIO WITH EASE YOU CANNOT BELIEVE.

Here are three tools designed to speed up the layout of any project where perfect adjacent lines are required. Please meet our **SADDLE SQUARES**.

How many times have you wanted to draw a line around a corner? Traditionally, this process involves moving your square from plane to plane and connecting the adjacent lines. And quite frankly, if your square is square and your eyesight true, this process works fine. However, as you may relate, the potential for error is always present and there is a significant time factor to accomplish this task accurately.

## SS-2 SADDLE SQUARE

**1101-098.....\$69.00 (FOUNDERS \$62.10)**

## SS-2x4 SADDLE SQUARE

**1101-025.....\$72.00 (FOUNDERS \$64.80)**

## SS-4 SADDLE SQUARE

**1101-099.....\$75.00 (FOUNDERS \$67.50)**

## SS-DT DOVETAIL SADDLE SQUARE

**1101-122.....\$107.00 (FOUNDERS \$96.30)**

## SS-2x4A ALUMINUM SADDLE SQUARE

**1104-025.....\$44.00 (FOUNDERS \$39.60)**

*Custom Engraving: SS-2, SS-2x4, SS-4 & SS-DT: 6 characters.*

*The SS-2x4A cannot be personalized.*

Our **SADDLE SQUARES** are your solution to gap free joints! They will lay out adjacent lines on all angles from 180 degrees through 85 degrees, and really shine on small and large-scale work! Mortise and tenons, lap joints, finger and bridle joints, cross drilled dowel joints, haunched miter mortise and tenons, lapped miters...and the list goes on. There is not a faster or more accurate way to perform similar tasks in your shop.

Use the **SS-2** on eight quarter stock or smaller, and the **SS-4** on four-inch or smaller material. Use the **SS-2x4** when you need the convenience of the two-inch and the four-inch legs in one tool. These squares will quickly become indispensable during your quest for "light-tight" work.

Milled from solid brass, each of these exquisite tools will perform flawlessly in your shop. Inlaid into each face of the **SADDLE SQUARES** are rosewood infills to complete the styling of this remarkable tool. The hinge pin is custom turned from stainless steel, providing a smooth acting joint without slop.

The **SS-DT DOVETAIL SADDLE SQUARE** really shines when it comes to dovetail layout. It replaces the need for a T-bevel and a square. The unique ability of this tool to fold around a corner will allow you to draw or scribe the necessary straight and angled pin lines in one easy stroke. Each and every angled line will be perfectly connected to an adjacent vertical line. One tool, one line, two planes!

The **SS-DT** will work on all stock up to two inches in thickness. (*The overall length is 6-1/4"; the width is 7/8".*)

Our **SADDLE SQUARES** are attractive, accurate, fit your hand, and are a constant reminder that tools do not have to be so simple that they lack grace, dignity and the ability to inspire. We invite you to put our **SADDLE SQUARES** to the test in your shop. These tools will quickly become some of your most cherished and trusted shop companions.

## Now Available In Black Anodized Aluminum

We have been producing the finest premium hand tools for over 20 years, and we don't know how many times we have heard "They are too pretty to use." Well, not this time! We have taken the same quality, same tolerances and made a tool you can use for a fraction of the cost. The **SS-2x4A ALUMINUM SADDLE SQUARE** will rival your favorites!



DRAWING A LINE AROUND A CORNER HAS NEVER BEEN EASIER. USE THE SS-2 FOR 3/4" STOCK OR SMALLER AND THE SS-4 FOR LARGER WORK.



HERE IS THE FIRST TOOL ALLOWING YOU TO LAY OUT A LINE ON END GRAIN, REFERENCING THE NARROW DIMENSION OF STOCK.



THERE IS NOT A FASTER OR MORE ACCURATE WAY TO LAY OUT JOINTS THAN WITH THE HELP OF OUR NEW SADDLE SQUARES.



A SADDLE SQUARE IS A PERFECT TOOL FOR JOINT LAYOUT WHEN YOUR STOCK IS TOO SMALL FOR A MARKING GAGE.



FOR RECTILINEAR WORK, THE SS-2x4 WORKS IDEAL.



DOVETAILS HAVE NEVER BEEN FASTER THAN WITH OUR SS-DT. ONE LINE, TWO PLANES. IT DOESN'T GET ANY EASIER OR MORE ACCURATE THAN THIS.



## Our Scratch Awls Provide Unparalleled Control For Accurate Pinpoint Marking Or Heavier Tasks And Fit Your Hand Like A Glove



Our scratch awls are flawlessly hand-turned by master turner, Mark Stevens. The uniquely crafted handles sit atop a hardened steel scribe point and is ready for the toughest of scribing or center marking chores.

The **SA-1 SCRATCH AWL** is designed to compliment its "big brother" the SA-2. It is great for starting screw holes and making divots for brad point drills. The handle comes to rest in the palm of your hand, the point acting as an extension of your index finger. This immobilizes your wrist and allows you to transfer "weight" to the point. As a safety feature, the brass ferrule completely encapsulates the tang and directs all downward forces to the minor diameter of the handle. The **SA-1** is a delightful addition to any shop and saves the day when the SA-2 is too long.

For fifteen years now, our **SA-2 SCRATCH AWL** has remained tops on the list of perennial best sellers, much appreciated by woodworkers, and equally prized by woodturners and collectors. The balance of this tool in your hand is unlike any you have ever experienced. The control of this awl, (*somewhat like a conductor's baton*) allows you to lay down lines in the tightest situations, like making dovetails, mortise and tenons or tracing profiles. The 4-1/2" hardened steel blade is long and narrow, terminating in a very fine point.

The elegant simplicity of our scratch awl family continues with the introduction of the **SA-3 BENT TIP SCRATCH AWL**. It works efficiently, feels splendid in your palm and will allow you to complete tasks that are rather awkward with a straight blade awl. Made to the same exacting standards of the SA-2, the **SA-3** really shines in awkward places and is amazingly easy to use. Try it once and you will be hooked!

<b>SA-1 SMALL SCRATCH AWL</b>	
<b>1101-058.....</b>	<b>\$39.00 (FOUNDERS \$35.10)</b>
<b>SA-2 LARGE SCRATCH AWL</b>	
<b>1101-018.....</b>	<b>\$45.00 (FOUNDERS \$40.50)</b>
<b>SA-3 BENT TIP SCRATCH AWL</b>	
<b>1101-088.....</b>	<b>\$49.00 (FOUNDERS \$44.10)</b>
<i>Custom Engraving is Not Available.</i>	

## Adjusting The Accuracy Of These Squares Is Quick And Easy, Ensuring A Lifetime Of Accurate Use

Our **AS-3 ADJUSTABLE TRY SQUARE** is factory calibrated to be within .001" over the length of the blade and features a proprietary blade/handle alignment mechanism allowing you to maintain squareness in the harshest of environments. When your square takes an unexpected trip to the floor, the factory specifications typically go out the window. However, it is possible for anyone to recalibrate our **AS-3** with a simple hex key. The ability to accurately register a rule to both sides of the handle creates a unique and beneficial tool for the active woodworker.

The **AS-3 ADJUSTABLE TRY SQUARE** measures 3" on the outside and 2" on the inside rule. It slips easily into an apron pocket and is perhaps the finest tool yet for setting router bit depths. Set it on your router base, spin the bit to the height on the rule and off you go. Another terrific function is the ability to get into confined spaces. Small drawers, scaled work, box making, toy making, model making, and joint work are just a sampling of the applications for this small-sized square. Because of this petite size, we highly recommend this tool for the young woodworker in your shop.

The graduated blade is made of satin chromed, hardened steel, which is precisely aligned with both faces of the handle. The outside graduations are aligned with the outside face of the handle, allowing the tool to be used as a true measuring device. This rule reads exact "0" at the heel of the square and increases toward the tip of the blade to accurately read height or length distances. The inside graduations are aligned perfectly with the inside face of the handle, so it can be used as a hook rule.

### The AS-9 ADJUSTABLE TRY SQUARE

is a mid-size tool and made to the same exacting standards as the AS-3. Additionally, it is equipped with a built-in slide stop. This handy lever easily slides out and locks in place, holding the tool to your material and freeing up your hands for other tasks. The **AS-9** measures nine inches on the outside and 7-1/2" inches on the inside rule.

### Specifications

**Accuracy:** Field adjustable, factory set to 90 degrees, plus or minus .001" over the blade length, inside and outside.

**Handle:** Solid 360 alloy, half-hard brass, rosewood infill.

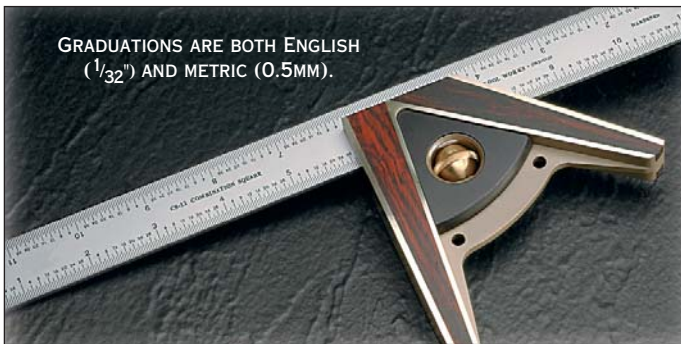
**Blade:** Hardened steel (Rc 54), satin chromed finish, photo-chemically etched. Graduations in 32nds.

**Blade Width:** AS-3: 0.92", AS-9: 1.50"

**Blade Thickness:** AS-3: 0.041", AS-9: 0.080"

<b>AS-3 ADJUSTABLE TRY SQUARE 3"</b>	
<b>1101-063.....</b>	<b>\$84.00 (FOUNDERS \$75.60)</b>
<b>AS-9 ADJUSTABLE TRY SQUARE 9"</b>	
<b>1101-071.....</b>	<b>\$129.00 (FOUNDERS \$116.10)</b>
<i>Custom Engraving: AS-3: 14 characters; AS-9: 20 characters.</i>	

# Our Combination Square Provides Accuracy You Can Trust



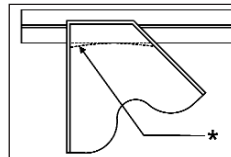
We are pleased to offer the classic Bridge City Tool Works 12" Combination Square. By design, combination squares with sliding blades involve moving parts and moving parts wear. Over time, the blade movement across the cast reference surface will erode the square's head. Like most abrasive erosion, this wear occurs at the edges first creating a "rockered" surface that is extremely problematic for a layout tool. Our tests, on a brand new combination square from a highly respected manufacturer, indicated that the 90-degree reference changed with less than sixty full length blade adjustments! It was minute, but continued to worsen and we became focused on addressing this issue in our own efforts.

With a commitment to accuracy and our traditional "look and feel" thoroughly addressed, we are pleased to offer the **CS-12 COMBINATION SQUARE**. To ensure accuracy between the blade and the square head over time, we have recessed two steel

friction pads into each **CS-12 COMBINATION SQUARE** head that are much closer to the hardness of the steel blade. This allows us to use a brass body which does not rust in humid environments and maintains accuracy as well as a unique appearance.

Each **CS-12** blade is 12 inches in length and is satin-chromed for excellent "readability." Both English and metric graduations are precisely aligned on the front and back surfaces of the blade. The solid brass body is precision inlaid with rosewood on each side, creating the heart of the **CS-12**. Capturing the warm combination of wood and brass, this component is an inspiration as well as an accurately machined reference (*within .002" on both the 90 and 45 degree legs of the tool*).

The grace, dignity and simplicity of the **CS-12** creates a stunning example of our motto, "Quality is Contagious." Your efforts will significantly improve with this beautiful crafted tool in your hands.



WEAR ALMOST INvariably OCCURS AT THE EDGES FIRST. HERE IS WHAT HAPPENS WHEN A HARDENED BLADE SLIDES OVER A SOFTER CAST SEAT. OVER TIME, THE RESULT IS A TOOL WITH UNPREDICTABLE ACCURACY. \*NOTE THE ERODED REFERENCE THAT THE BLADE MUST SEAT ITSELF AGAINST WHEN TIGHTENED. OUR CS-12 ELIMINATES THIS PROBLEM.

## CS-12 COMBINATION SQUARE

**1101-082.....\$189.00 (FOUNDERS \$170.10)**

*Custom Engraving: 6 characters.*

## Two Great Tools For Small Scale Work



accuracy run-out of less than .002" over the length of a fully extended blade. Once milled, both of the legs are precisely fitted with a matched rosewood inlay, creating a look and feel that has always been the hallmark of Bridge City Tool Works. The ( $\frac{3}{4}$ " width) blade is made from stainless steel and is satin-chromed for excellent readability. The English graduations ( $\frac{1}{8}$ ",  $\frac{1}{16}$ ",  $\frac{1}{32}$ ",  $\frac{1}{64}$ ") are photo-chemically etched and meet or exceed all U.S. and British accuracy standards for rulers.

The **DS-6 DOUBLE SQUARE** is handy simply because it does not have a 45 degree leg. This tool works great in conjunction with other combination squares where you have multiple settings and don't really care to compromise consistency by constantly adjusting the blade length back and forth on the same project. This is usually a recipe for "gaposis" and the "putty cure" down the road.

The **DS-6 DOUBLE SQUARE** is made to the same exacting standards and tolerance as the **CS-6** and employs the same stainless steel blade. It is a gorgeous and venerable design you do not want to be without.

## CS-6 COMBINATION SQUARE

**1101-125E.....\$84.00 (FOUNDERS \$75.60)**

## DS-6 DOUBLE SQUARE

**1101-126.....\$84.00 (FOUNDERS \$75.60)**

*Custom Engraving: CS-6: 5 characters; DS-6: 8 characters.*

Using tools sized for the job is one of the many joys of working wood successfully. As an example, the differences between building an armoire and a music box are simultaneously similar and different. Although the woodworking processes are very similar, the tools employed are different in size.

The **CS-6 COMBINATION SQUARE** fills substantial voids for many projects where tool size makes the job at hand less cumbersome. The simple small scale tool functions as a depth gage, height gage, small square, miter square and can be used with a scribe or pencil as a marking gage.

The head of the **CS-6** is cast from silicon brass. Each leg of the square head is precisely CNC milled, creating a tool with an



## This Is The Perfect Plumb Bob For Indoor Use!

**W**eighing at just 1 ounce, the **PB-9 MINI PLUMB BOB** is a work of art and performs flawlessly. The top ball is made of solid brass and the tip stainless steel. Included is a knurled brass spool with an elegantly simple design that easily fits your thumb or forefinger allowing you to control the length of cord extended. The cord is made of tough braided polyester fiber (.019" thick).



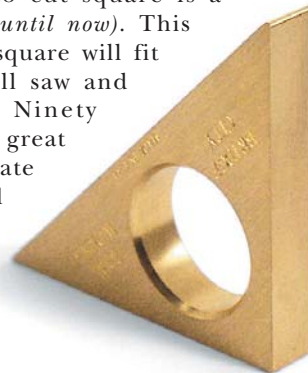
### PB-9 MINI PLUMB BOB

**1102-073.....\$35.00 (FOUNDERS \$31.50)**

*Custom Engraving is Not Available.*

## Scroll Saw Owners: This Is The Small Bridge City Square You Have Been Looking For!

**S**etting a scroll saw to cut square is a chancy proposition (*until now*). This beautiful solid brass square will fit in the throat of any scroll saw and other confined corners. Ninety degree leg is 1.85". Works great for 45 degrees too. Accurate to within .001" on all angles, the **SS-1** really shines for all small scale work.



### SS-1 SCROLL SAW SQUARE

**1102-084.....\$19.95 (FOUNDERS \$17.96)**

*Custom Engraving is Not Available.*

## Become A MEMBER OF THE FOUNDER'S CIRCLE Today! And SAVE 10% OFF EVERY ORDER And Much More!

*The Founder's Circle/Founder's Circle Plus Membership provides many exclusive benefits for its members.  
The \$45/\$75 annual membership dues entitles members to receive the following:*

**"SNEAK PREVIEW" ANNOUNCEMENTS.** FOUR OR FIVE TIMES PER YEAR WE INTRODUCE NEW PRODUCTS TO MEMBERS OF THE FOUNDER'S CIRCLE BEFORE THEY MAKE THE PAGES OF OUR CATALOG. THIS ENSURES THAT OUR MEMBERS RECEIVE THE SNEAK PREVIEW CATALOGS AND WILL ALWAYS BE OFFERED OUR NEW TOOLS AT A PRICE LOWER THAN ANYONE ELSE. THIS IS THE VERY BEST WAY TO OWN EXTRAORDINARY BRIDGE CITY TOOLS!

**"SIGNATURE SERIES" TOOLS!** THE INITIAL PRODUCTION RUN OF A NEW TOOL IS NUMBERED AND SIGNED BY THE DESIGNER, JOHN ECONOMAKI. THESE POPULAR LIMITED EDITIONS ARE AVAILABLE EXCLUSIVELY TO FOUNDER'S CIRCLE MEMBERS AT A PRICE THAT IS ALWAYS LESS THAN THE CATALOG VERSION OF THE SAME TOOL!

**CATALOG DISCOUNTS & SPECIAL SALES.** BRIDGE CITY FOUNDER'S CIRCLE MEMBERS RECEIVE A 10% DISCOUNT OFF RETAIL PURCHASES FROM OUR CATALOG. MEMBERS WITH EMAIL ADDRESSES RECEIVE ADDITIONAL DISCOUNTS ON SALE ITEMS IN OUR POPULAR EMAIL ONLY SALES.

**EXCLUSIVE, ONE-OF-A-KIND TOOL OFFERINGS.** ONCE A YEAR, WE DESIGN AND MANUFACTURE ONE NEW TOOL OFFERED EXCLUSIVELY TO BRIDGE CITY FOUNDER'S CIRCLE MEMBERS, NEVER TO BE MADE AGAIN! THE

ANNOUNCEMENT OF OUR COMMEMORATIVE TOOL IS AN ANTICIPATED ANNUAL EVENT. ADDITIONALLY, YOU CAN PLAN ON OTHER "SPECIAL OCCASION" INTRODUCTIONS THAT WILL ONLY BE OFFERED TO BRIDGE CITY FOUNDER'S CIRCLE MEMBERS. FOUNDER'S CIRCLE PLUS MEMBERS RECEIVE AN ADDITIONAL 10% DISCOUNT ON COMMEMORATIVE TOOL OFFERS.

**FREE ENGRAVING ON ALL TOOL PURCHASES!** ON EACH TOOL, YOUR FIRST THREE LETTERS ARE FREE, ADDITIONAL LETTERS ARE HALF PRICE, AT \$1.00 PER LETTER. FOUNDER'S CIRCLE PLUS MEMBERS RECEIVE UNLIMITED FREE ENGRAVING.

**MEMBERS HAVE THE OPTION OF PURCHASING ALL FUTURE "SIGNATURE SERIES" TOOLS WITH THE SAME SERIAL NUMBER.** YOUR BRIDGE CITY FOUNDER'S CIRCLE MEMBERSHIP ENTITLES YOU TO RESERVE ONE NUMBER FOR THE DURATION OF YOUR MEMBERSHIP YEAR. FOUNDER'S CIRCLE PLUS MEMBERS ARE ENTITLED TO FOUR NUMBERS. ADDITIONAL NUMBERS MAY BE RESERVED FOR \$10.00 EACH, PER YEAR, WITH YOUR MEMBERSHIP.

**AUTOMATIC ORDERING.** BRIDGE CITY FOUNDER'S CIRCLE MEMBERS MAY OPT TO HAVE NEW TOOL INTRODUCTIONS AUTOMATICALLY SENT WITHOUT

ORDERING AND RECEIVE AN ADDITIONAL 2% DISCOUNT OFF THE TOOL. IF YOU RECEIVE A TOOL UNDER THIS PLAN AND DO NOT WISH TO KEEP IT, SIMPLY RETURN THE TOOL WITHIN 90 DAYS, AND WE WILL ISSUE YOU A FULL REFUND. THIS IS A NO-RISK SERVICE FOR THOSE WHO DO NOT WANT TO MISS A GOOD DEAL.

**CONVENIENCE OF AUTOMATIC RENEWALS.** THREE WEEKS PRIOR TO YOUR MEMBERSHIP EXPIRATION DATE, WE WILL SEND YOU AN AUTOMATIC RENEWAL NOTICE. THIS IS KNOWN AS A NEGATIVE OPTION MEMBERSHIP PLAN. IF YOU DO NOT WISH TO RENEW YOUR FOUNDER'S CIRCLE MEMBERSHIP, YOU MAY NOTIFY US BY PHONE (800-253-3332), FAX (503-287-1085), E-MAIL (SALES@BRIDGECITYTOOLS.COM) OR MAIL AT ANY TIME DURING YOUR MEMBERSHIP YEAR. SHOULD YOU FORGET TO INFORM US THAT YOU WISH TO CANCEL YOUR MEMBERSHIP, ALL YOU HAVE TO DO IS REQUEST A NO-HASSLE REFUND.

**BRIDGE CITY FOUNDER'S CIRCLE MEMBERSHIP IS A NO-RISK PROPOSITION.** REFUNDS CONSIST OF MEMBERSHIP DUES LESS ANY DISCOUNTS THAT WERE APPLIED DURING YOUR MEMBERSHIP YEAR. REFUNDS WILL NOT BE APPROVED IF COMMEMORATIVE TOOLS HAVE BEEN ORDERED AND RECEIVED.

### A Word About Our Delivery Schedule

All our tools are specially made tools. If "WHEN" we deliver is more important to you than "WHAT" we deliver, you may at times be frustrated with us. Please note: All tools are shipped in sequence as the orders are received. **We make no promises for delivery by a specific date. Credit card orders are not billed until the day the tool is shipped.**

### Satisfaction Guarantee

We stand behind everything we sell. If for any reason you are not 100% satisfied with your purchase, simply return the item **WITHIN 90 DAYS** for an exchange or a full refund on the merchandise. Tools received beyond the 90 day guarantee are processed under our "Lifetime" warranty (*see page 20*).

## This Tool Will Allow You To Work Safer And More Precisely By Freeing The Demands On Your Fingers In The Shop!



Anytime you need to hold small tools, parts or other items firmly and safely, a pin vise is a logical choice. Drills, files, hex keys, screwdriver bits, nut drivers, and custom work are the tip of the iceberg for the **PV-1 PIN VISE**.

Our **PV-1** uses a three-jawed chuck ( $1/4"$ ) that enables you to grab and hold a wide assortment of tools and accessories for doing precise work. In addition to the three-jaw capacity, we have a two-jaw insert that will allow you to use #11 knife blades in the **PV-1** which can be extremely handy at times.

### Specifications

**Overall Length:** 7", **Length From Ferrule To End Of Chuck:**  $2-1/2"$

**Length Of Wooden Handle:**  $4-3/4"$ , **Width Of Handle (Widest Section):**  $1-1/2"$

**Chuck Capacity:** 0.004" – 0.250"

Turned from a solid stainless steel billet, the keyless chuck of the **PV-1** works smoothly and locks firmly on all round and hex shapes (*within the capacity of the chuck*). The hardened tool steel jaws are nickel-plated and will last for generations of use. The threaded chuck shaft is stainless steel and is plated with nickel and finally brass plated for aesthetic considerations.

Each rosewood handle is hand turned and polished by our master turner, Mark Stevens. The overall feel of the tool is balanced and the appearance is a fitting continuation to our family of heirloom tools.

#### PV-1 PIN VISE

**1101-144.....\$149.00 (FOUNDERS \$143.10)**

*Custom Engraving is Not Available.*

## Our Ultimate Large Square – Perfect Squareness On One Side And An Infinite Adjustment Over 180 Degrees On The Other Side



YOU CAN USE THE AS-24 AS A DRAFTING T-SQUARE OR AN ADJUSTABLE ANGLE SQUARE BY FLIPPING THE TOOL OVER AND LOOSENING THE KNOB.

### Specifications

**Accuracy:** 90 degrees, plus or minus .002" over the length of the blade.

**Head:** CNC 360 brass with rosewood infill.

**Blade:** Hardened steel (*Rockwell 54*), satin chromed, 24" length,  $1-1/2"$  width,  $3/32"$  thickness. **Weight:** 3 lbs. 4 oz.

#### AS-24 ADJUSTABLE ANGLE SQUARE

**1101-013.....\$139.00 (FOUNDERS \$125.10)**

*Custom Engraving is Not Available.*

*See specifications for revision on head design.*

Without question, the **AS-24 ADJUSTABLE ANGLE SQUARE** is the ultimate large square from our family of tools. There is nothing like it on the market. It features perfect squareness on one side, and with a simple flip of the handle, infinite adjustment over 180 degrees on the other side. The tolerance on the square side is an impressive plus or minus .002" over the length of the  $22-1/2"$  blade. The adjustable side is secured with a beautifully turned and knurled solid brass knob with a perfectly crafted rosewood infill. The blade is precision ground, hardened steel with a satin chromed finish to resist rust and to ensure its handsome look for years to come.

The T-handle design allows you to use the tool exactly like a drafting T-square. Flip it over, loosen the knob and you have a full-length, adjustable angle square. Since the fixed 90 degree angle is now on top, this square will automatically plot the complementary angle. Flip it back over and you have your fixed 90 degrees back; the **AS-24** is two squares in one! Framing squares are great for building houses but let's face it – they're lousy bench tools. We guarantee this square to be the most versatile and beautifully made large square available today.

## Get Dead-On, Chatterless Counter Sinks With This Single Flute Countersink

A single flute countersink will only make PERFECTLY concentric countersinks, it's the multiple flutes which cause chatter. This is the best woodworking countersink we have ever used. ( $1/4"$  Diameter, Single Flute,  $3/8"$  Shank Diameter)



#### 82-DEGREE COUNTERSINK

**7601-012.....\$24.95 (FOUNDERS \$22.45)**

*Custom Engraving is Not Available.*

### Our Lifetime \$5.00 Guarantee

#### RECALIBRATE • RESQUARE • REPLACEMENT OPTION

These are the three "Rs" of Bridge City Tool Works:

As an owner of a Bridge City Tool Works tool, you may get it recalibrated or functionally repaired for five dollars per tool. **Tools with excessive fire/flood or abuse damage are typically deemed functionally unrepairable by our Repair Department and may be used (at our discretion and with your permission only) as a 20% credit towards an identical or similarly sized, priced and functionally equivalent tool if available.**

A tool is worthless if it is not within a reasonable and proper tolerance suitable to your needs. We ought to know, this is how we came to be. We invite you to compare our tools with any production hand woodworking tools made in America, Europe or Japan.



## Discontinued Items At Blow Out Prices

Everything listed on this page is priced to sell. Once they are gone, they will NEVER be made again. This may be your only opportunity to purchase these discontinued items so don't delay!



AM-1



AMS-7



BV-1



SC-2



SC-5



PD-11



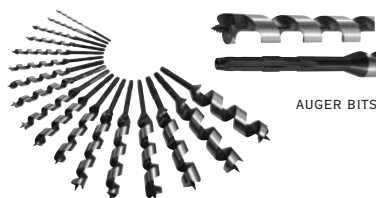
PG-27



TB-1



TB-2



AUGER BITS



TS-3



CT-10 WALNUT CASE

ITEM NO.	DESCRIPTION	ENGRAVE CHARACTERS	CATALOG PRICE	DISCONTINUED SALE PRICE	FNDRS CIRCLE SALE PRICE
1102-092	AM-1 ANGLE MASTER	6	239.00	179.25	161.30
1101-105	AMS-7 ADJUSTABLE MITER SQUARE	14	119.00	95.20	85.68
1102-105	AMS-7 ADJUSTABLE MITER SQUARE (JUARA™ WOOD)	14	119.00	95.20	85.68
1101-158	BV-1 BENCH VISE SYSTEM	10	239.00	191.00	171.90
1101-153	SC-2 TITANIUM NITRIDE COATED PROFILE SCRAPERS	NA	39.95	33.95	30.55
1101-155	SC-5 TITANIUM NITRIDE COATED PROFILE SCRAPERS	NA	39.95	33.95	30.55
1101-157	PD-11 PROPORTIONAL DIVIDER	14	259.00	207.20	186.48
1101-160	PG-27 PANTOGRAPH	3	179.00	125.30	112.17
1102-009	TB-1 T-BEVEL (JUARA™ WOOD)	28	81.00	68.85	61.97
1101-010	TB-2 SLIDING T-BEVEL 7"	3	89.00	75.00	67.50
1102-004	TS-3 DOUBLE SQUARE (JUARA™ WOOD)	24	68.00	57.80	52.02
1101-145-3	1/4" AUGER BIT	NA	11.20	4.48	4.48
1101-145-4	5/16" AUGER BIT	NA	11.20	4.48	4.48
1101-145-5	3/8" AUGER BIT	NA	11.20	4.48	4.48
1101-145-6	7/16" AUGER BIT	NA	11.20	4.48	4.48
1101-145-7	1/2" AUGER BIT	NA	13.08	5.23	5.23
1101-145-8	9/16" AUGER BIT	NA	13.68	5.47	5.47
1101-145-9	5/8" AUGER BIT	NA	13.68	5.47	5.47
1101-145-10	11/16" AUGER BIT	NA	16.10	6.44	6.44
1101-145-11	3/4" AUGER BIT	NA	16.10	6.44	6.44
1101-145-12	13/16" AUGER BIT	NA	18.70	7.48	7.48
1101-145-13	7/8" AUGER BIT	NA	18.70	7.48	7.48
1101-145-14	15/16" AUGER BIT	NA	23.10	9.24	9.24
1101-145-15	1" AUGER BIT	NA	23.10	9.24	9.24
1101-145-16	1-1/8" AUGER BIT	NA	25.83	10.33	10.33
1101-145-17	1-1/4" AUGER BIT	NA	25.83	10.33	10.33
1101-145-18	1-3/8" AUGER BIT	NA	56.25	22.50	22.50
1101-145-19	1-1/2" AUGER BIT	NA	56.25	22.50	22.50
2202-010	CT-10 WALNUT CASE	NA	120.00	75.00	75.00



Please refer to our main catalog and/or website at <http://www.BridgeCityTools.com> for information on the listed items.

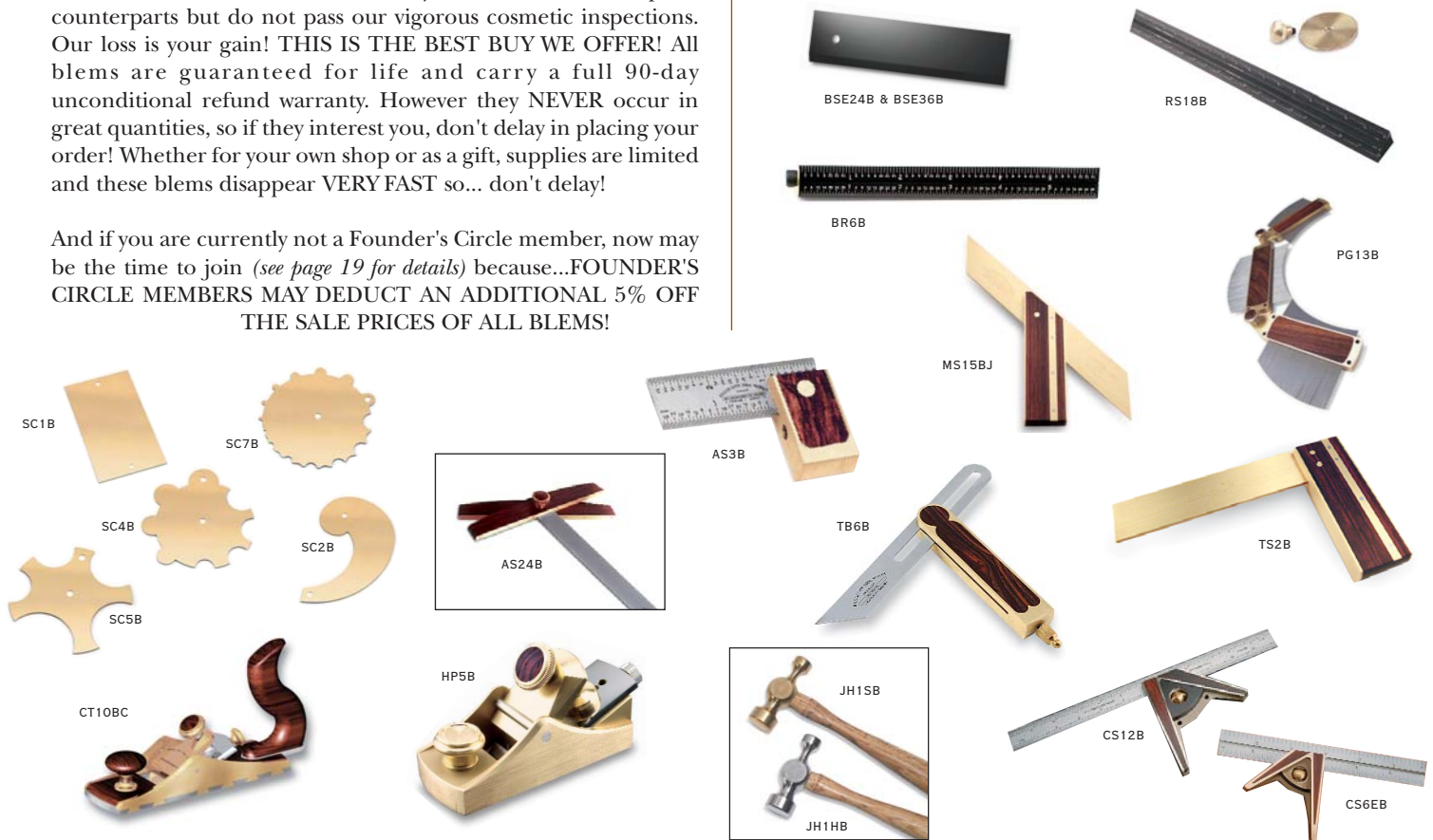
Orders over \$300.00 are eligible for our ZERO INTEREST EASY PAY PLAN.

(Credit cards only, up to six installments; shipping and handling is added to the first installment.)

## Our First-Come, First-Serve BLEM SALE Create Quite A Stir Around The Country!

All of our "blem" tools are functionally identical to their full price counterparts but do not pass our vigorous cosmetic inspections. Our loss is your gain! **THIS IS THE BEST BUY WE OFFER!** All blemis are guaranteed for life and carry a full 90-day unconditional refund warranty. However they NEVER occur in great quantities, so if they interest you, don't delay in placing your order! Whether for your own shop or as a gift, supplies are limited and these blemis disappear VERY FAST so... don't delay!

And if you are currently not a Founder's Circle member, now may be the time to join (*see page 19 for details*) because...**FOUNDER'S CIRCLE MEMBERS MAY DEDUCT AN ADDITIONAL 5% OFF THE SALE PRICES OF ALL BLEMIS!**



ITEM NO.	DESCRIPTION	ENGRAVE CHARACTERS	CATALOG PRICE SALE	BLEM PRICE	FNDERS CIRCLE PRICE
AS24B *	ADJUSTABLE ANGLE SQUARE 24"	NA	139.00	104.25	99.04
AS3B *	ADJUSTABLE TRY SQUARE 3"	14	84.00	63.00	59.85
BR6B	ZERO GLARE POCKET RULE 6"	NA	14.95	11.21	10.65
BSE24B	BEVELED STRAIGHT EDGE 24" (POWDER COATED)	NA	54.95	41.22	39.16
BSE36B	BEVELED STRAIGHT EDGE 36" (POWDER COATED)	NA	74.95	56.22	53.41
CS6EB	COMBINATION SQUARE 6"	5	84.00	63.00	59.85
CS12B	COMBINATION SQUARE 12" (E/M)	6	189.00	141.75	134.66
DS6B	DOUBLE SQUARE 6"	8	84.00	63.00	59.85
HP5B	SMALL BLOCK PLANE (52° ATTACK ANGLE)	6	239.00	179.25	170.29
JH1HB	STEEL HAMMER	5	49.00	36.75	34.91
JH1SB	BRASS HAMMER	5	49.00	36.75	34.91
MS15BJ	MID-SIZED MITER SQUARE (J)	30	85.00	63.75	60.56
PG13B *	TRIPLE PROFILE GAGE	14	284.00	213.00	202.35
RS18B	RS-18 ZERO GLARE RULE 18"	NA	79.95	59.96	56.96
SC1B	TITANIUM COATED PROFILE SCRAPERS	NA	39.95	29.96	28.46
SC2B	TITANIUM COATED PROFILE SCRAPERS	NA	39.95	29.96	28.46
SC4B	TITANIUM COATED PROFILE SCRAPERS	NA	39.95	29.96	28.46
SC5B	TITANIUM COATED PROFILE SCRAPERS	NA	39.95	29.96	28.46
SC7B	TITANIUM COATED PROFILE SCRAPERS	NA	39.95	29.96	28.46
540B	TITANIUM COATED PROFILE SCRAPERS SET	NA	151.20	99.00	94.05
SE24B	PRECISION STRAIGHT EDGE 24"	NA	59.00	44.25	42.04
TB6B	END LOCK SLIDING T-BEVEL 7"	6	89.00	66.75	63.41
TS2B *	MASTER TRY SQUARE	30	89.00	66.75	63.41
CT10BC	SMOOTHING PLANE W/CASE	NA	1015.00	750.00	750.00

Please refer to our main catalog and/or website at <http://www.BridgeCityTools.com> for information on the listed tools.

All factory blemished tools are marked with a "B." Tools are in English graduations unless specified as metric.

Tools are in rosewood unless specified as Juara™ Wood.

Abbreviation Key: J = Juara™ Wood; M = Metric graduation; \* = Quantity available less than a dozen



#### ORDER ONLINE OR BY EMAIL

Orders placed online at [www.BridgeCityTools.com](http://www.BridgeCityTools.com) are fast and credit card information is secure with browser versions 4.0 and above. If you have made previous Bridge City credit card purchases, you may email your order to: [sales@bridgecitytools.com](mailto:sales@bridgecitytools.com). Please DO NOT send credit card information via email.

#### ORDER BY PHONE

Call Toll Free 1-800-253-3332 in the United States and Canada. In Portland and elsewhere call 1-503-282-6997. For fast, friendly service call us Monday through Friday, 8:00 AM to 5:00 PM Pacific Standard Time. Please have your mailing label information and credit card handy.

#### ORDER BY MAIL

Complete the order form, detach and mail enclosed in an envelope along with your check or credit card number. We accept payment by checks, money orders, Visa, MasterCard, American Express or Discover. Please include the expiration date and sign the form where indicated for all credit card orders. By using your own envelope to help eliminate waste, you may deduct \$1.00 from your mailed-in order!

#### ORDER BY FAX

Our FAX number is 1-503-287-1085. Please fill out the order form completely and include your credit card number, expiration date and signature. Sorry, no COD's.

#### CUSTOM ENGRAVING

Most of our tools can be personalized for an additional charge of \$2.00 per letter (*punctuation is free*). The first three letters are free for Founder's Circle Members. Please indicate your preference on the order form.

#### SHIPPING

We ship all non-personalized in-stock items within 24 hours. In most cases, your order will arrive within ten working days. We ship US Priority Mail and UPS. For faster service, select **2nd Day Air** for an additional \$10.00 or **1st Day Air** for an additional \$15.00. This applies to in-stock merchandise only, backorders will ship regular ground service.

#### INTERNATIONAL ORDERS

We accept orders via credit card or check in US funds only. In Canada, call us toll free at 1-800-253-3332, elsewhere call 1-503-282-6997 or FAX your order to 1-503-287-1085. Shipping customs duties, taxes and administrative charges are paid upon delivery directly to UPS (COD). We ship Air Parcel Post to Canada and UPS Worldwide Express to other countries. No rush service available.

#### GIFT WRAPPING

Any item can be gift wrapped for a nominal charge of \$4.50. This is a great service for anyone who waits until the last minute to shop. Simply indicate the appropriate item(s) on the order form.

#### GIFT CERTIFICATES

Indecisive about which tool would make the perfect gift for that special woodworker? May we suggest a Bridge City Gift Certificate? Available in \$5, \$10, \$25, \$50 and \$100.

#### SALE ITEMS

All sale items including over-stocks, special buys, and factory blemishes are offered to all customers with email addresses. Please update your customer record with a valid email address if you wish to receive notification of our popular sales.

### Our Lifetime \$5.00 Guarantee

RECALIBRATE • RESQUARE • REPLACEMENT OPTION

These are the three "Rs" of Bridge City Tools Works:

As an owner of a Bridge City Tool Works tool, you may get it recalibrated or functionally repaired for five dollars per tool. **Tools with excessive fire/flood or abuse damage are typically deemed functionally unrepairable by our Repair Department and may be used (at our discretion and with your permission only) as a 20% credit towards an identical or similarly sized, priced and functionally equivalent tool if available.**

A tool is worthless if it is not within a reasonable and proper tolerance suitable to your needs. We ought to know, this is how we came to be. We invite you to compare our tools with any production hand woodworking tools made in America, Europe or Japan.

**100% SATISFACTION GUARANTEE** We stand behind everything we sell. If for any reason you are not 100% satisfied with your purchase, simply return the item **WITHIN 90 DAYS** for an exchange or a full refund on the merchandise. Please use the detachable return label on your packing slip for convenience.

**QUESTIONS?** Call our toll free number 1-800-253-3332 if you have any questions regarding our products or services. Otherwise, email us at: [sales@bridgecitytools.com](mailto:sales@bridgecitytools.com).

**IMPORTANT NOTE:** Due to the handmade nature of Bridge City tools, wait lists occasionally occur. Our tools are special tools. If "WHEN" we deliver is more important to you than "WHAT" we deliver, you may at times be frustrated with us. For time sensitive gift purchases, please request a gift card if the tool is not immediately available. Prices are subject to change without notice.

CLIP TO MAIL YOUR ORDER

**1 YES! PLEASE notify me of your E-MAIL ONLY SPECIAL SALE!** E-MAIL (PLEASE PRINT LEGIBLY)  
Bridge City Tool Works is a proponent of e-mail privacy and we pledge NEVER to rent, sell or loan your confidential e-mail address. **Period.**

**2 ORDERED BY:** **SHIP TO:** Leave blank if same as "ORDERED BY" address.

NAME			NAME		
COMPANY			COMPANY		
ADDRESS			ADDRESS		
CITY	STATE	ZIP	CITY	STATE	ZIP
DAY PHONE			DAY PHONE		
E-MAIL (PLEASE PRINT LEGIBLY)					

**3**

ITEM NUMBER	DESCRIPTION	QTY	ENGRAVING PLEASE PRINT	ENGRAVING \$2 / LETTER	PRICE EACH	TOTAL PRICE
	<b>Bridge City Founder's Circle Membership, Circle One: Founder's Circle / Founder's Circle Plus</b> Your membership discounts apply to this order!				<b>\$45 / \$75</b>	

**4 METHOD OF PAYMENT** Please do not mail cash. Sorry, no COD's.

☐ CHECK/MONEY ORDER (Payable to: Bridge City Tool Works)  
☐ VISA ☐ AMERICAN EXPRESS  
☐ DISCOVER ☐ MASTERCARD EXP. DATE \_\_\_\_\_

CARD NUMBER \_\_\_\_\_

SIGNATURE \_\_\_\_\_

**SHIPPING & RUSH SERVICE**

\$0-\$40	\$7.95
\$40.01-\$50	\$8.95
\$50.01-\$60	\$9.95
\$60.01-\$70	\$10.95
\$70.01-\$499.99	\$11.95
\$500.00+	FREE

Free shipping does not apply to foreign orders.  
1<sup>st</sup> Day Air \_\_\_\_\_ add an additional \$15.00  
2<sup>nd</sup> Day Air \_\_\_\_\_ add an additional \$10.00  
Rush service is not available for Saturday/Sunday delivery.

**SUBTOTAL**

**SHIPPING & HANDLING**  
International orders are charged at cost

**RUSH SERVICE**  
See chart

By using your own envelope to help eliminate waste, you may deduct \$1.00 from your mailed-in order!

**TOTAL ENCLOSED**

**-\$1.00**

**5 MAIL PREFERENCE SERVICE...HELP US ELIMINATE WASTE**

Occasionally we make our mailing list available to carefully screened companies and organizations whose products and services may be of interest to you. If you prefer not to receive such mailings, please let us know. (**We do not make e-mail addresses available under any circumstances.**)

☐ PLEASE DO NOT SEND ME BRIDGE CITY CATALOGS.  
☐ I'M RECEIVING DUPLICATE CATALOGS. (Please send us both address labels, and we will consolidate your files.)

NAME \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

☐ PLEASE DO NOT MAKE MY NAME AVAILABLE TO OTHER COMPANIES.

☐ PLEASE NOTIFY ME IF ANY ITEM IN MY ORDER WILL BE DELAYED. (E-Mail address required.)

**6**

Mail your order to:  
**BRIDGE CITY TOOL WORKS**  
A DIVISION OF FINE TOOLS, L.L.C.  
920 N.E. 58TH AVE., SUITE 100  
PORTLAND, OR 97213-3786

**Thank you for your order!**

**BRIDGE CITY**  
TOOL WORKS

Argon v6
File Edit Layout View Planes Pen Text Dimension Verify Window PhotoRender Animation Help

## SOLID MODELING FOR WOODWORKERS is coming THIS SUMMER to a city near YOU!

**H**ere is your opportunity to learn *solid modeling* up-close and personal. This affordable, two-day class is specifically orientated to woodworkers and is guaranteed to give you the confidence to make sophisticated, visually appealing solid models by day two.

Class begins each day at 9:00am and adjourns at 4:00pm on Friday and 3:00pm on Saturday. If you would like to bring your laptop, great, however a computer is not required for this class.

*Solid Modeling for Woodworkers* is taught by *John Economaki*, a trained educator, woodworker, and the designer of all Bridge City tools. John has been involved in woodworking since the mid 1960's and has a wealth of information he shares regarding design and the *solid modeling* process during this informative two-day experience. He has been designing products exclusively by computer since 1990 and will show you the tips and techniques he has acquired through the years, while demonstrating the power and numerous benefits of *Argon*—the easiest to learn professional solid modeler available today!

Whether you're a complete CAD novice, or you're looking for a way to dramatically expand your woodworking hobby or business, *Solid*

*Modeling for Woodworkers* will teach you many new skills and give you much to think about!

Pick your city, mark your calendar, and prepare to learn and meet new friends. Class sizes are limited, so don't delay – register for *Solid Modeling for Woodworkers* today!

LOCATION	DATES	ORDER NO.	TUITION
Philadelphia	July 23-24	CAD-PHL	\$195.00
Atlanta	July 30-31	CAD-ATL	\$195.00
Boston	Aug 6-7	CAD-BOS	\$195.00
Chicago	Aug 13-14	CAD-MDW	\$195.00
Los Angeles	Aug 20-21	CAD-LAX	\$195.00
San Francisco	Aug 27-28	CAD-SFO	\$195.00

HURRY! REGISTRATION DEADLINE IS JUNE 4, 2004

Tuition must be received in full upon registration. Class location, directions, hotel accommodations and other pertinent information will be sent to you upon registration. Full refund cancellations will be accepted two weeks prior to class date. Tuition does not include transportation, meals or lodging.

We hope you enjoy this brief encounter with solid modeling. Now take a look at what others are doing with Argon...







Bridge City Tool Works  
A Division of Fine Tools, L.L.C.  
920 N.E. 58th Ave., Suite 100  
Portland, OR 97213-3786

1-800-253-3332  
[www.BridgeCityTools.com](http://www.BridgeCityTools.com)

OR CURRENT RESIDENT

PRESORTED  
FIRST CLASS MAIL  
U.S. POSTAGE  
PAID  
PERMIT NO.11  
PORTLAND, OR

### A VERY IMPORTANT NOTE TO ALL OUR CUSTOMERS

Bridge City Tool Works will be observing a company wide vacation closure from July 3 through July 17, 2004. We will return to normal operations on July 18, 2004.